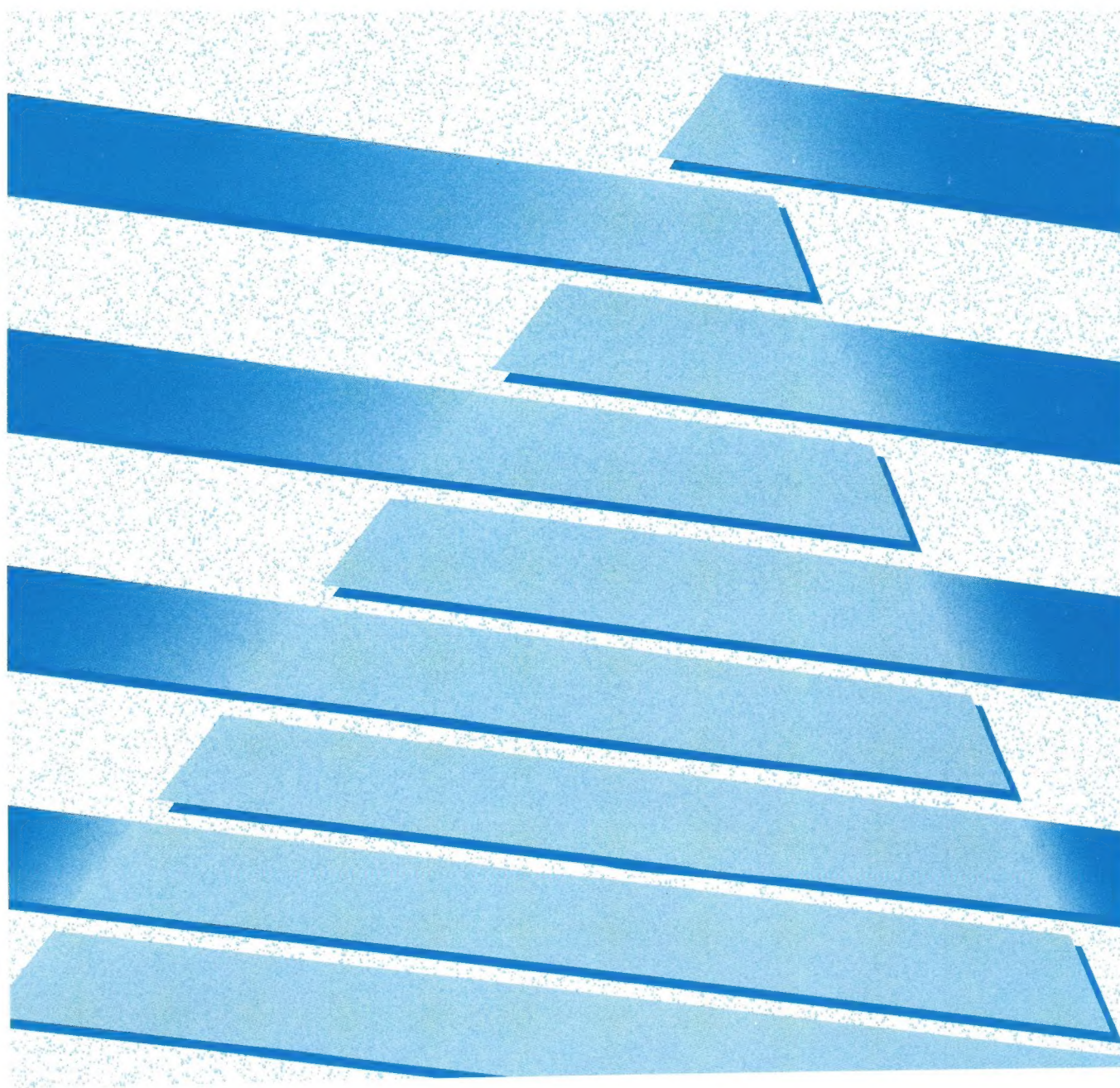




ALLEN-BRADLEY

ControlView™
Core
(Cat. No. 6190-CVC)

User Manual



Important User Information

Because of the variety of uses for the products described in this publication, those responsible for the application and use of this control equipment must satisfy themselves that all necessary steps have been taken to assure that each application and use meets all performance and safety requirements, including any applicable laws, regulations, codes and standards.

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Throughout this manual we use notes to make you aware of safety considerations:



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Attentions help you:

- identify a hazard
- avoid the hazard
- recognize the consequences

Important: Identifies information that is especially important for successful application and understanding of the product.

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Summary of Changes

Changes from Release 2.0 to 3.0

The following changes have been made to the Core and the Core User Manual since release 2.0:

For information on this new feature:	Refer to:	The feature appeared in:
Installation instructions for the Core have been moved to the <i>ControlView Installation Manual</i> .	ControlView Installation Manual	software release 3.0
The <i>ControlView System Documentor User Manual</i> has been incorporated into the <i>ControlView Core User Manual</i>	Chapter 7, Appendix A	software release 3.0
Choose from 750 different printers	Chapter 2	software release 3.0
Configure string tags in the database	Chapter 2	software release 3.0
Use three additional scan classes for string tags	Chapter 2	software release 3.0
Configure data channels	Chapter 2	software release 3.0
Configure modems	Chapter 2, Appendix E	software release 3.0
Configure TCP/IP network	Chapter 2, Appendix D	software release 3.0
Use the ACTIVITYCLR command	Appendix A	software release 3.0
Configure the COMSTATUS display from the menus	Chapter 2	software release 2.12
Create a security system that checks all commands, macros or tags, regardless of where they are used	Chapter 2	software release 2.12
Add a logout macro that runs automatically each time a user logs out	Chapter 2	software release 2.12
Import and export databases from within the database editor and from ControlView's command line	Chapter 2, Appendix A, Appendix C	software release 2.12
Control when commands are logged to the Activity Log using the ECHOON and ECHOOFF commands and the @ symbol	Chapter 2, Appendix A	software release 2.12
Use the TOGGLE, TOPLEVELOFF and TOPLEVELON commands	Appendix A	software release 2.12
Access the enhanced feature of the CHAIN, DISPLAY, SET and STATUS commands	Appendix A	software release 2.12
Use the CHAINCLR command	Appendix A	software release 2.12
Use printer numbers not queue names, when printing over the Novell network. Use the Novell SPOOL command to set up the printer number (with NetWare 2.2 or NetWare 386)	Appendix A	software release 2.12
Use a mouse	Chapter 2	software release 2.11
Use a touch screen	Chapter 2	software release 2.11
Automatically remove windows as new windows are opened	Chapter 2	software release 2.11
Toggle menubar mode	Appendix A	software release 2.11
Enter several commands together on the command line	Chapter 4	software release 2.11

Preface

How To Use This Manual

This manual describes the features and capabilities of the ControlView™ system, shows how to operate the system, and gives detailed information on how to develop an application.

Conventions Used in This Manual

Table P.A shows how to interpret the print conventions used for commands and what to do when you see them.

Table P.A
Print Conventions for Commands

When you see:	it refers to:	and you should:
Bold typewriter font,; BEEP , , 90, 3	a command and parameters	type the command exactly as shown
Italics in angle brackets: <i><database></i>	a required parameter	substitute an actual parameter (e.g., an existing database)
Italics in square brackets: <i>[database]</i>	an optional parameter	substitute an actual parameter if you want. The command will also work without the parameter.

Examples of Print Conventions:

LOAD plant1 *press Enter*

means type in the command and parameter exactly as shown, then press **Enter**.

LOAD *<database>* *press Enter*

means type in the command, with the name of an existing database as the parameter, then press **Enter**.

DATABASE *[database]* *press Enter*

means type in the command, with or without the name of a database as the parameter, then press **Enter**.

Audience

This manual is intended for developers of applications for the monitoring and controlling of plant operations with programmable controllers. To use this manual you should already be familiar with:

- the IBM® AT™ or PS/2™ computer or its equivalent (see the *Installation Manual*)
- MS or PC DOS
- programmable controllers, from Allen-Bradley or other manufacturers including Modbus™, GE and Siemens.

Related Publications

The following publications provide more information on the complete ControlView System:

ControlView Publications

Publication	Publication Number
A-B Drivers User Manual	Pub 6190-6.5.5
Alarming User Manual	Pub 6190-6.5.4
Application Window User Manual	Pub 6190-6.5.21
Batch Management User Manual	Pub 6190-6.5.18
Core Getting Started Manual	Pub 6190-6.5.24
CP14 Intelligent Control Panel User Manual	Pub 6190-6.5.14
C-Toolkit User Manual	Pub 6190-6.5.2
Data Logger User Manual	Pub 6190-6.5.7
Derived Tags User Manual	Pub 6190-6.5.11
Event Detector User Manual	Pub 6190-6.5.10
GE Driver User Manual	Pub 6190-6.5.26
Installation Manual	Pub 6190-6.5.25
Lotus 1-2-3 Add-In User Manual	Pub 6190-6.5.27
Master Index	Pub 6190-5.2
Modbus Driver User Manual	Pub 6190-6.5.16
Mouse GRAFIX Editor User Manual	Pub 6190-6.5.3
Networking User Manual	Pub 6190-6.5.9
Reporting User Manual	Pub 6190-6.5.8
Siemens Driver User Manual	Pub 6190-6.5.19

Publication	Publication Number
Statistical Process Control User Manual	Pub 6190-6.5.20
Trending User Manual	Pub 6190-6.5.6

Related Allen-Bradley Publications

Publication	Publication Number
Advisor PC Internal Data Highway User Manual	Pub 6171-6.5.14
Allen-Bradley Communication Interface Modules Installation Data	Pub 1784-2.17

For literature on other Allen-Bradley products, refer to the Automation Group Publications Index (publication SD 499).

For literature on Novell products, refer to Novell publications.

For literature on TCP/IP products, refer to publications for PC/TCP® Network Software for DOS from FTP® Software Inc. Version 2.05.

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Introducing ControlView

What is ControlView?

ControlView is a set of software products that integrate the data acquisition, the supervisory control, and the management information functions of industrial information processing.

ControlView is designed for use in industrial applications where data acquisition and manipulation, operator interaction with plant activities, and communications with higher level plant and corporate computers must be fast and reliable.

With its modular design, open architecture, and many options, ControlView adapts readily to a wide variety of industrial applications.

Examples of ControlView applications include:

- plant floor operator interface
- data collection system/data concentrator
- networked cell/supervisory controller including graphics, data analysis, alarm handling, historical logging, and interface to higher level plant computers
- platform for custom application development. With the ControlView tools, you can create applications ranging from sophisticated data analysis packages to the integration of third party devices with Allen-Bradley control systems

The benefits of ControlView include:

- reduced cost for the total control system
- increased effectiveness of operations
- ease of developing user applications
- increased flow of plant floor information to other areas of the organization



ATTENTION: If you are installing a new release of ControlView software over a previous installation, be sure to follow the installation procedures outlined in the *ControlView Installation Manual* precisely.

About This Manual

In Chapter 2, *The Setup Menu*, and Chapter 3, *The Actions Menu*, the Core User Manual leads you through the two main menus. The Setup menu selections enable you to configure ControlView and then construct your own application. The Actions menu selections let you test the application, once you have created it.

Chapter 4, *Running From the Command Line*, describes an alternative way of operating ControlView; by typing commands into the command line. Once you are familiar with operating the menu options, you will probably find using the commands quicker and more convenient.

Chapter 5, *Running Mouse GRAFIX Displays*, provides specific information about running your Mouse GRAFIX displays.

Chapter 6, *Customizing the System*, tells you how to customize your system with symbols, macros, dedicated keys, help files and menus.

Chapter 7, *The System Documentor*, tells you how produce reports about your system's configuration.

The appendices give specific reference information about the ControlView commands, keys, database import and export, networks and modems.

The menu illustrations in this manual are for a ControlView system with the following options installed:

- A-B Drivers
- Alarming
- C-Toolkit
- Data Logger
- Derived Tags
- Event Detector
- Mouse GRAFIX Editor

- Reporting
- Trending

If you have a different set of options installed, your menus will reflect them.

Starting ControlView

To start up ControlView:

1. Make sure you are at the DOS prompt.
2. Log onto the drive (by typing **C:** or **D:** , or whatever drive you installed the software on).
3. Type:

CV *press Enter*

The Setup menu opens (unless the default Startup file has been changed).

Loading the ControlView Window Manager into High Memory

If you have the Application Window installed and require a large amount of system memory to run programs such as the 6200 software, you need to add the /h parameter to the CV command.

When specified, the /h parameter causes the ControlView window manager to be loaded into high memory, not low memory, thus freeing up more system memory.

This is the CV command with the /h parameter:

CV /h *press Enter*

Working in a Multiple Project Environment

All ControlView data is stored in default locations on the computer's hard disk. It is possible to change these default locations so that you can create multiple environments.

To startup ControlView in a location, other than the default location, type:

CV <pathname> *press Enter*

where **<pathname>** specifies the new location.

Both the /h parameter and the <pathname> can be used together in the same CV command:

CV <pathname> /h *press Enter*

The Setup Menu

Use the Setup menu to prepare a ControlView operator environment. You must:

- configure the hardware peripherals, such as the keyboard(s), mouse, and printer(s)
- set the computer's ports for the actual types of programmable controllers and communications network you'll be using
- name each device (programmable controllers, networks, even printers) so they can be referenced by name throughout the system
- create the database: define the data locations to be monitored, set alarm conditions, and assign security to certain tags
- create the plant monitoring displays - Mouse GRAFIX windows, trend graphs, or C-Toolkit created displays. Note that the Mouse GRAFIX Editor, Trending, and the C-Toolkit are optional application modules
- create custom key definitions, menus or symbols to help users navigate through the windows you have developed
- if required, design security features into your system to prevent unauthorized access to certain windows or system commands

Before You Begin

Every ControlView system uses some software options. Read this chapter to determine which options you need to set up your installation, and verify that the required options have been installed.

Have the manuals for your options close at hand. At certain points you'll need to refer to the specific details of the options you are using.

About the Menu System

The menu system, which comprises the Setup menu and the Actions menu, makes it easier to develop and test a ControlView plant monitoring system.

ControlView can be run without using the menu system: every menu item is also available as a command, and some features are only available as commands. Table 2.J, *The Setup Menu and Related Commands* shows the Setup menu items and their related commands.

To run ControlView without using the menus, choose *Exit Menu System* from the Exit menu. The blue Command Line will appear at the bottom of the screen; otherwise the screen will be blank.

For more information on using the commands to run ControlView, refer to Chapter 4, *Running from the Command Line*. For a quick reference to all commands, see Appendix A, *ControlView Commands*.

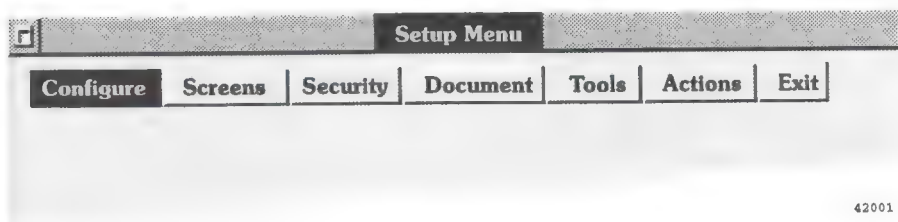
Using the Menus

When ControlView starts up, it automatically opens the Setup Menu. ControlView opens to the Setup Menu for your convenience in developing your system. This is set in the Toplevel macro; you can modify ControlView to start up to any window you choose.

The Setup Menu provides all the configuration options. The second menu from the right is named Actions—choosing *Go to Actions Menu* brings up the second main menu, the Actions menu.

Important: The Setup and Action menus contain the ControlView Core items, plus menu selections for the options installed in your system. In this book, the illustrations show the menus containing the options listed in the Preface. Your menus may differ from the ones shown.

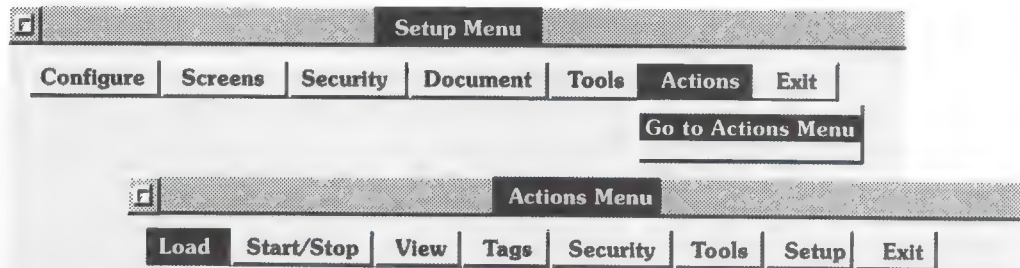
Figure 2.1
Setup Menu



42001

The Actions menu contains file activities, such as loading and unloading databases, Key Definition files, and Mouse GRAFIX files; viewing options, that let you selectively view programmable controller animated displays such as Trend displays or Mouse GRAFIX displays; and Start/Stop options which allow you to enable and disable Alarming, Logging, Trending, and other subsystems.

Figure 2.2
Getting to the Actions Menu



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To return to the Setup menu, choose *Setup*, then choose *Go to Setup Menu*.

You can go from the Setup Menu to the Actions Menu freely, whether or not you have loaded a database or started running an application. You have the freedom to test an application as you're developing it, without a strict separation of "on-line" and "off-line" activities. Of course, certain applications requiring tag values will require that a database be loaded before you can run them.

Important: The limitations are:

- you can't change the data channel or device configuration and see the effects of the changes immediately; you must restart ControlView to re-initialize the tables in memory
- if you change the node or scan class configuration while a database is loaded, you'll have to unload and reload the database to see the changes
- you can't modify a database while it is loaded; you must unload it first (you can view current information or edit another database with the database editor)

The Configuration Sequence

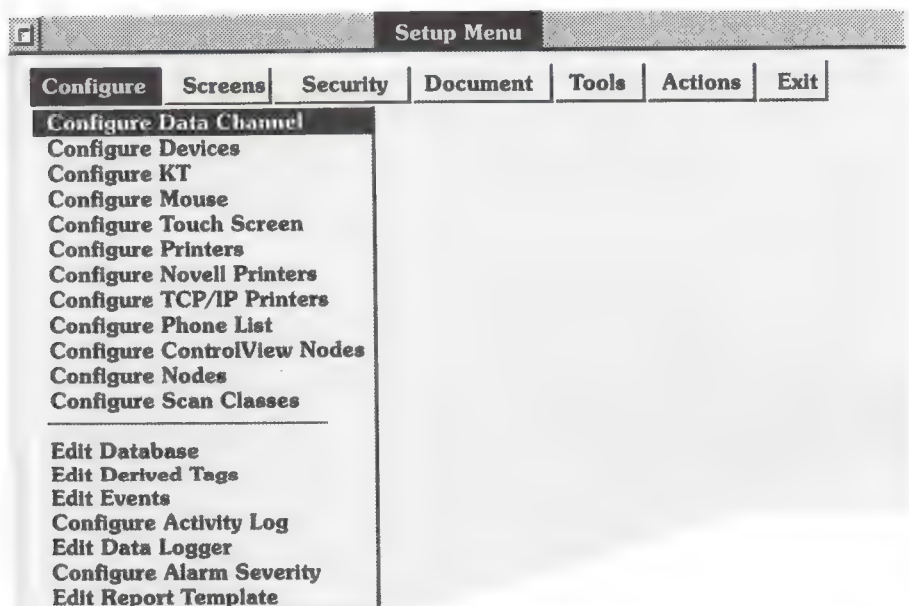
To set up your hardware and database, follow the Configure menu from top to bottom, omitting any items which refer to hardware or software options you are not using.

Once the Configure menu items have been set up, you can define the options such as Mouse GRAFIX or Trending, in the order you prefer. You may set alarm information and security classifications for certain tags as you create the database, but it's usual to return to these in the later stages of your setup and add the final touches. Since a security system involves restricting access to commands, windows, and macros, you'll have to add to the security system after you've created all the windows, symbols and macros that you require.

Configure Menu

The Configure menu contains the configuration steps required to build a ControlView application. Every application requires a data channel, device, node and scan class configuration; these steps must be done first. The database should be created immediately after configuration (although you can return to the database editor later and add points, or add alarm or security information). Derived Tags, Event Detector, Data Logger and Alarming are options; if they are not installed, their menu items will not show in the Configure menu.

Figure 2.3
Configure Menu



43002

Configure Data Channel

Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Configure Data Channel

To set up the communication network(s) you'll be using:

1. Choose *Configure Data Channel* from the Configure menu. The Data Channel Configuration window will open.

Figure 2.4
Data Channel Configuration Window

Channel	Type	No. of Messages
Highway1	DH/DH+	2
Highway2	MODBUS	2
Network1	NetBIOS	4

Accept <+> Cancel <Esc>

43607

2. Fill in the fields. Use a separate row for each highway and each network. (Just fill in the fields for the highways and network(s) that you have.)

Press **Enter** when the cursor appears in each field, to pop up a list of choices.

3. When the highway and network information has been defined, choose *Accept* to save the configuration and return to the Setup Menu.
4. For the changes you've made to take effect, choose *Quit to DOS* under Exit, and restart ControlView. The data channel configuration loads into memory when ControlView starts up.

For more information on highway and network configuration, including recommended settings, refer to the user manual for the I/O driver software you are using.

Configure Data Channel
Configure Devices
 Configure KT
 Configure Mouse
 Configure Touch Screen
 Configure Printers
 Configure Novell Printers
 Configure TCP/IP Printers
 Configure Phone List
 Configure ControlView Nodes
 Configure Nodes
 Configure Scan Classes
 Edit Database
 Edit Derived Tags
 Edit Events
 Configure Activity Log
 Edit Data Logger
 Configure Alarm Severity
 Edit Report Template

Configure Devices

The ports can be connected to several types of devices: communication networks (or "highways"), printers, a mouse, a touch screen, and Control Panel keyboards. You establish the port settings in the Device Configuration window.

1. Choose *Configure Devices* from the Configure menu, and the Device Configuration window appears.

Figure 2.5
Device Configuration Window

Device Configuration

Modify Modem Configuration

Serial Port	Device	Baud	Data Bits	Stop Bits	Parity	Modem

Printer Port	Device
LPT1	
LPT2	
NetLPT1	
NetLPT2	
NetLPT3	

Use PS/2 Auxiliary Mouse Port?

Accept <+> Cancel<Esc>

The standard IBM parallel ports, or the parallel port(s) on the 6171-MX5/8 expander.

The Novell network printer ports.

2. Choose *Modem Configuration*. The Modem Configuration window appears.

43091

Figure 2.6
Modem Configuration Window

Modem Configuration			
Modem Device	Modem Type	RTS Start Delay (ms)	RTS Stop Delay (ms)
Modem1			
Modem2			
Modem3			
Modem4			
Modem5			
Modem6			
Modem7			
Modem8			

Accept <+> Cancel <+>

43628

- Fill in the fields identifying each modem (MODEM1, MODEM2...MODEM8), along with its modem type and Request To Send (RTS) start and stop delays, where applicable. The delay values you enter are automatically rounded up to the next 5ms increment.

- Modem Type

There are three Modem Types (refer to Appendix E *Modems and Highway Topology* for detailed information about selecting modem types):

- Choose *Dial-up* for a dial-up modem. Dial-up modems must assert a Data Carrier Detect (DCD) signal to establish the link.
- Choose *RTS-Constant* to assert a Request To Send (RTS) at power up and leave it on constantly.
- Choose *RTS-Toggle* to assert the Request To Send (RTS) line when a message is about to be transmitted. A timer is started (for the time defined in the RTS Start Delay field). When the timer expires, the message is transmitted. When the transmission is complete, a second timer is started (for the duration entered in the RTS Stop Delay field). When the second timer has expired, the RTS line is switched off.
- RTS Start Delay (ms)

Leave this blank if you have selected Dial-Up or RTS-Constant. For RTS-Toggle, enter the delay time before the message is sent.

- RTS Stop Delay (ms)

Leave this blank if you have selected Dial-Up or RTS-Constant.
For RTS-Toggle, enter the delay time after the message is sent.

4. Click on *Accept* to save the modem settings and return to the Device Configuration window.
5. In the Device Configuration window, choose *Modify*.

Figure 2.7
Device Configuration Window

The screenshot shows the 'Device Configuration' window with the 'Modify Modem Configuration' tab selected. The window contains several tables for configuring serial communication parameters.

Serial Port	Device	Baud	Data Bits	Stop Bits	Parity	Modem

Printer Port	Device
LPT1	
LPT2	
NetLPT1	
NetLPT2	
NetLPT3	

Use PS/2 Auxiliary Mouse Port?

43222

6. Fill in the fields which are appropriate for your application:

- Serial Port

Press **Enter** on the field and choose a port to configure. Standard AT-style computers can choose from IBMCOM1 and IBMCOM2. IBMCOM3 and IBMCOM4 are not supported on AT-style computers as they share interrupts with COM1 and COM2.

PS/2s can use IBMCOM1 through IBMCOM8. If you have a 6171-MX5 or MX8 serial parallel expander, you can use any of the MXCOM ports. Serial printers not on the LAN are configured in this section of the window. The NETLPT ports are for printers on the LAN network only.

- Device

Press **Enter** on the field and choose the name of the device that is attached to the port. The device names refer to:

Table 2.A
Device Names

Device Name	Meaning
HIGHWAY1 or HIGHWAY2	one of the two communications networks defined in <i>Data Channel Configuration</i>
MOUSE	Mouse Systems Model M4 optical, or Microsoft serial mouse. If using a PS/2 mouse in the dedicated mouse port, do not use this setting
PANEL1 or PANEL2	an Allen-Bradley-CP14 Control Panel keyboard. Two may be used simultaneously; if only one is to be used, define it as PANEL1
PRINTER1 through PRINTER4	one of the printers defined in <i>Configure Printers</i>
SERIAL1 through SERIAL4	generic serial devices for custom C-Toolkit use
TOUCH	Microtouch or Elographics touch screen

7. Fill in the remaining columns with the appropriate settings for the type of device:

Table 2.B
Typical Device Settings

Device	Baud Rate	Data Bits	Stop Bits	Parity	Modem
PANEL	1200	8	1	ODD	NONE
TOUCH	4800	7	2	NONE	NONE
MOUSE	1200	8	1	NONE	NONE
HIGHWAY	19200	8	1	NONE	MODEM1

Important: If you select a modem, it must already have been defined on the Modem Configuration window.

- Use PS/2 Auxiliary Mouse Port?

Enter *Y* if you will be using a PS/2 mouse in the PS/2's dedicated mouse port. You can use only one kind of mouse: if you use the PS/2 mouse you can't define a mouse in the Device field.

■ **Printer Port**

Each of the four available printer devices, Printer1, Printer2, Printer3, Printer4, can be directed to one of the following:

- one of the serial ports. The serial printers must be defined in this window, in the *Serial Port* fields at the top of the window.
- one of the two standard parallel printer ports, LPT1 and LPT2. These printers must be defined in this window, in the fields LPT1 and LPT2 in the lower part of the window.
- one of the Novell LAN network remote printers, NetLPT1, NetLPT2 and NetLPT3. The Novell printer(s) must be defined in this window, in the fields NetLPT1, NetLPT2 and NetLPT3, in the lower part of the window, before any further Novell network printer configuration settings are made.
- one of the TCP/IP network remote printers. Do *not* define the TCP/IP printers in any of the fields in this window.

All the printer devices, Printer1, Printer2, Printer3 and Printer4, need to be configured later, by selecting *Configure Printers* from the Configure Menu.

8. Choose *Accept* or press the + key to save the information in the Device Configuration window to disk.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Configure KT

The Allen-Bradley 1784-KT and KT2 Communication Adaptors are optional plug-in cards which provide communication ports for the Data Highway Plus. One or two KT adaptors can be installed in your computer.

If you have a T47 laptop computer, you can use the built-in KL card as a replacement for the 1784-KT card.

To configure ControlView to use the KT or KT2 adaptor:

1. Choose *Configure KT* from the Configuration menu.

Figure 2.8
KT Adaptor Configuration Window

KT Adaptor Configuration				
Adapter	Device	Station Address	Terminating Resistor	Base Address
1	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
2	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

42095

2. Fill in the fields:

▪ Device

Choose *HIGHWAY1* or *HIGHWAY2*. The highway must have been configured in the Data Channel Configuration window, but must not be attached to a port in the Device Configuration window.

▪ Station Address

Enter an octal number from 0 through 77.

▪ Terminating Resistor

Choose *Set* when the KT card is connected to a terminating node, otherwise choose *Reset*.

▪ Base Address

Enter a base address that matches the switch setting on the KT board. For a KT2 adaptor, leave this field blank.

For complete information on these settings, refer to the Allen-Bradley Processor Communication Interface Module Product Data sheet.

3. Choose *Quit to DOS* from the Exit menu, then restart ControlView to initialize the device settings.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Configure Mouse

In the Mouse Configuration window, you enable or disable the mouse, adjust the color and movement of the mouse pointer, and optionally define it as operating in left-handed mode (except in the Mouse GRAFIX Editor).

To configure the mouse:

1. Choose *Configure Mouse*. The Mouse Configuration window opens.
2. Fill in the fields to suit your preferences:

Figure 2.9
Mouse Configuration Window

Mouse Configuration

Mouse Enabled:

Pointer Color:

Left-Handed Mouse:

Mouse Resolution:

Accelerated Movement:

Double Click Speed:

42512

- **Mouse Enabled**

Choose *Yes* to turn on the mouse.

- **Pointer Color**

Select the color for the mouse pointer.

- **Left-Handed Mouse**

Choose *Yes* to operate in left-handed mode, or *No* to operate in right-handed mode.

- **Mouse Resolution**

Adjust the slider to the sensitivity you require.

- **Accelerated Movement**

Adjust the slider to the degree of movement you require. This is the distance the mouse pointer moves on the screen, compared to the distance you move the mouse on your desk.

- **Double Click Speed**

Adjust the slider to the speed at which you want ControlView to respond to a double click.

3. Test the settings by clicking on *Test*.

4. Click on *Accept* when you are satisfied with your settings.

Configure Touch Screen

Use this option to configure and calibrate the touch screen to match the operator's viewing angle. The settings are stored until you change them again.

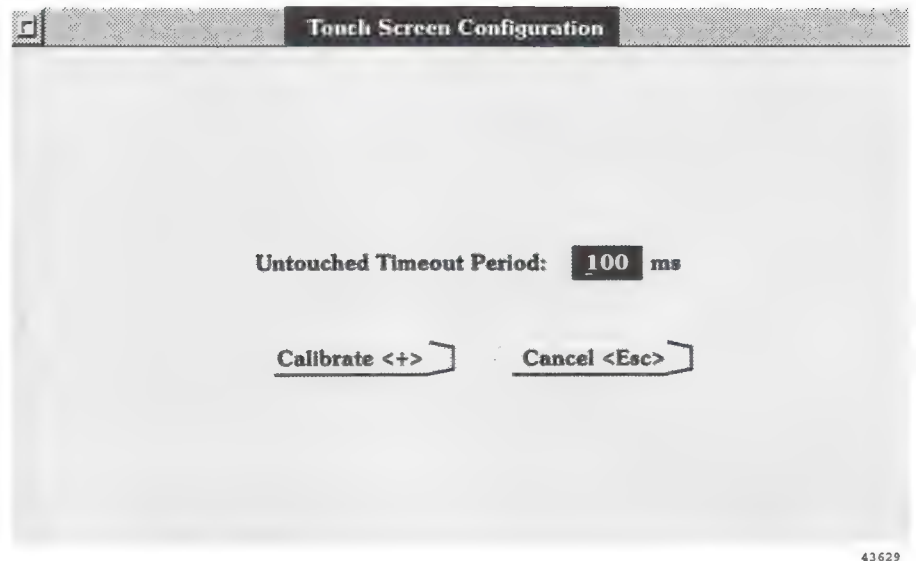
To configure the touch screen:

1. Choose *Configure Touch Screen* from the Configuration menu. The Touch Screen Configuration window is displayed.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Figure 2.10
Touch Screen Configuration Window



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2. Type in the Untouched Timeout Period. A period of 60 to 100 ms is usually adequate (though larger screens, for 19 inch monitors, require longer timeout periods - up to 120 ms).

The Untouched Timeout Period is the time that elapses between the operator completing, and ControlView responding to, a touch on the screen.

3. Choose *Calibrate* or press + to calibrate the touch screen. A large flashing arrow is displayed at the bottom left of the screen.
4. Touch the tip of the arrow on the touch screen. The large flashing arrow is now displayed at the top right of the screen.
5. Touch the tip of the arrow on the touch screen. The large flashing arrow disappears as the message "Touch screen is now calibrated" is displayed.
6. Press **Esc** to exit back to the Configure menu.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Configure Printers

Choose *Configure Printers* to configure your printer type, whether the connection is from a serial or parallel port or by Novell or TCP/IP network. Use this menu option to assign a printer type to each printer device, and to configure specific printer options.

1. Choose *Configure Printers*. The Printer Configuration Editor window appears showing the current configuration of each printer.

Figure 2.11
Printer Configuration Editor Window

Device	Printer Type
Printer1	Epson LQ-2550 (Color)
Printer2	B&W (ControlView Classic)
Printer3	B&W (ControlView Classic)
Printer4	B&W (ControlView Classic)

Accept <+> Cancel <Esc>

43643

Selecting a Printer

More than 750 printers are supported by ControlView. During the installation procedure, the installer specifies the list of printers that are to be available to you. These are the printers in the popup list for the *Current Printer Type* field in the Configure Printer window, described below.

If you need to add more printers to this popup list, use the procedure described in Appendix A, *ControlView Printers* in the *ControlView Installation Manual*. When you have added another printer, you will need to return to the Printer Configuration Editor window to check the settings.

Important: A printer designated “ControlView Classic” is one of the standard printer types from pre-3.0 releases of ControlView (JX80, B+W and HP-PCL). If your printer has been used with ControlView in previous releases, select one of these settings from the popup list.

Important: Non-ControlView Classic printers rely on third party drivers, and can be much slower than ControlView Classic printers. Printing screenprints and large reports may be very slow during scanning.

There are two rules about the entries in the popup list:

- With the ControlView Classic printer types, the printer names appear once in the popup list, even if all four printers are the same ControlView Classic printer type.
 - With the *non*-ControlView Classic printer types, you are limited to configuring one printer for each entry in the popup list. For example, if you have three Citizen MSP-20 printers to configure, *Citizen MSP-20* must appear three times in the popup list, once for each printer. You must add the Citizen MSP-20 printer three times to ControlView.
1. Highlight one of Printer1 through Printer4 in the Printer Configuration Editor window.
 2. Choose *Select Printer*. The Select Printer window appears.

Figure 2.12
Configure Printer Window

Select Printer

Current Printer Type:
Epson LQ-2550

Initialization Code:
[Empty text box]

Spool Size: 125 KiloBytes

Accept <+> Cancel <Esc>

43644

3. Change the fields as follows:

- Current Printer Type

Select the printer type from the list shown in the popup list. Use **PgUp**, **PgDn** and the arrow keys, or the slider, to scroll through the list.

Except for ControlView Classic printer types, each item on the popup list can be assigned to just one printer. If you have more than one printer of the same type, it must be repeated in the popup list. You must add the printer to ControlView a second time using the procedure described in Appendix A, *ControlView Printers* in the *ControlView Installation Manual*.

- Initialization Code

If required, type the initialization code for your printer. For details, refer to your printer manual. Initialization Code only functions with ControlView Classic printers; do *not* use this field with *non-ControlView Classic* printers..

The initialization code is an escape sequence (in decimal) that the PRINTINIT command will use to initialize the printer to print in different fonts, bold type, condensed type, etc. To change the printer from its default settings, the operator must send this code sequence to the printer by:

- using the PRINTINIT command
- choosing *Initialize Printer* from the Tools menu

- Spool Size









Type in the spool size. This is the disk space that is set aside for the printer to spool print jobs. The default is 125 KiloBytes.

4. Choose *Accept* to save this printer type.

Printer Options for Graphics (Non ControlView Classic Printers)

Table 2.C shows you how to set the printer options to orientate a graphic on a page. You set these options on the Configure Printer Options window. For detailed information see *Setting Printer Options*, later in this section.

Table 2.C
Printer Options for Graphics

Printer Driver	Page Size (inches)	Orientation (of image)	Image Size (inches)	
Portrait	8.5 x 11	Portrait	8 x 4	
	8.5 x 11	Portrait	4 x 8	
	8.5 x 11	Landscape	8 x 4	
	8.5 x 11	Landscape	4 x 8	
Landscape	11 x 8.5	Portrait	8 x 4	
	11 x 8.5	Portrait	4 x 8	
	11 x 8.5	Landscape	8 x 4	
	11 x 8.5	Landscape	4 x 8	

43 660

There are two positioning actions:

- *Page Size* positions the *sheet of paper* to being either portrait or landscape.
- *Orientation* sets the *graphic image* on the page to either portrait or landscape

Printer Options for Text (Non ControlView Classic Printers)



Table 2.D shows you how to set the page size for text. You set page size on the Configure Printer Options window. For detailed information see *Setting Printer Options*, later in this section.

All landscape printers accommodate 132 characters per line.

Portrait printers normally accommodate 80 characters per line. If the file that is being printed is more than 80 characters wide, all lines are printed completely, but they are wrapped.

With ControlView Classic portrait printers, to accommodate more than 80 characters per line, use the Initialization Code field in the Configure Printer window to compress or reduce the font size. You cannot use the Initialization Code field with non-ControlView Classic printers.

Table 2.D
Printer Options for Text

Printer Driver	Page Size (inches)	
Portrait	automatically defaults to 11 x 8.5	
Landscape	automatically defaults to 11 x 8.5	

43661

Setting Printer Options

For *non*-ControlView Classic printers, use this option to change the default settings for the printer. You *cannot* change the settings for ControlView Classic printers.

Important: Changing the default printer options will slow down printing performance.

1. Highlight one of Printer1 through Printer4 in the Printer Configuration Editor window.
2. Choose *Printer Options*. The Configure Printer Options window appears.

Figure 2.13
Configure Printer Options Window

Configure Printer Options

Printing Options:

Page Size (Width X Height) **8.500** x **11.00** inches

Graphics Options:

Image Size (Width X Height): **7.750** X **4.750** inches

Orientation: **Portrait**

Resolution (Horz. X Vert.): **120 X 120** dots per inch (dpi)

Image Color: **B&W**

Ribbon Type: **Black**

Accept <+> **Cancel <Esc>**

43645

3. Specify the Printing Options by changing these fields:

- Page Size (Width X Height)

Specify the size of the paper. The default is 8.5 x 11 inches.

If you are using a landscape printer, specify the page size so that the width is greater than the height.

4. For graphics printers, change any of the Graphics Options specified in the following fields:

- Image Size (Width x Height)

Specify an approximate size for the screen prints. The default is 7.75 x 4.75 inches.

- Orientation

Choose *Portrait* or *Landscape*. This specifies how the graphic is to be orientated on the page. Refer to Table 2.C for assistance in using this field.

- Resolution (Horz. x Vert.)

Valid values are displayed in the popup window. The default is printer type dependent.

- Image Color

Choose B&W (Black & White) or Color. B&W is the default.

- Ribbon Type

Specify the color of the ribbon that is loaded into the printer. Valid values are shown in the popup window. You cannot specify black, the default, when *Image Color* is defined as Color.

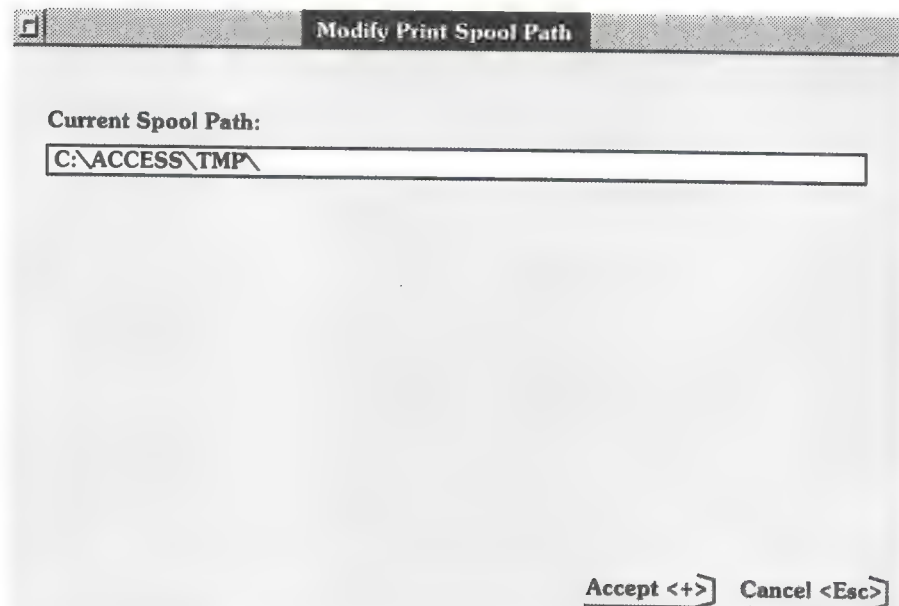
5. Choose *Accept*. The Printer Configuration Editor is redisplayed.

Changing the Spool Path

The same spool path is used by all the printers.

1. Highlight any one of the printers in the Printer Configuration Editor. All printers use the same spool path.
2. Choose *Spool Path*. The Modify Print Spool Path window is displayed.

Figure 2.14
Modify Print Spool Path Window



43646

3. Change the displayed field:

▪ Current Spool Path

Specify the path to a directory. Remember to start with the drive letter.

Important: Whenever you configure a pathname, be sure to start with the drive letter. This is absolutely essential when running ControlView in a multi-drive environment.

Important: The spool path must end with a trailing backslash.

4. Choose *Accept* to save the spool path.

Configure Novell Printers

This menu item sets up one or more printers on a Novell local area network. Printing can be directed to any one, or any combination of the three simultaneously. These printers must already be defined in the Device Configuration window and the Printer Configuration Editor window.

1. Choose *Configure Novell Printers*. The Novell Printer Configuration window appears.
2. Fill in the fields, following the Novell "CAPTURE" command options; refer to your network operations manual and Appendix D, *Running on a Network* for more detailed information.

Figure 2.15
Novell Printer Configuration Window

Novell Printer Configuration				
Capture	Banner Name	Status		
Local Printer	Server Name	Server Printer	Banner Text	Banner Name
NetLPT1: *	CSV_2	1	ControlView1	SUPERVISOR
NetLPT2:	CSV_2	2	ControlView2	SUPERVISOR
NetLPT3:	CSV_3	1	ControlView3	SUPERVISOR

* = Printer captured

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

- Configure Data Channel**
- Configure Devices**
- Configure KT**
- Configure Mouse**
- Configure Touch Screen**
- Configure Printers**
- Configure Novell Printers**
- Configure TCP/IP Printers**
- Configure Phone List**
- Configure ControlView Nodes**
- Configure Nodes**
- Configure Scan Classes**

- Edit Database**
- Edit Derived Tags**
- Edit Events**
- Configure Activity Log**
- Edit Data Logger**
- Configure Alarm Severity**
- Edit Report Template**

- Configure Data Channel**
- Configure Devices**
- Configure KT**
- Configure Mouse**
- Configure Touch Screen**
- Configure Printers**
- Configure Novell Printers**
- Configure TCP/IP Printers**
- Configure Phone List**
- Configure ControlView Nodes**
- Configure Nodes**
- Configure Scan Classes**

- Edit Database**
- Edit Derived Tags**
- Edit Events**
- Configure Activity Log**
- Edit Data Logger**
- Configure Alarm Severity**
- Edit Report Template**

Configure TCP/IP Printers

This menu item sets up one or more printers on a TCP/IP local area network. These printers must already be defined in the Printer Configuration Editor window but *not* on the Device Configuration window.

1. Choose *Configure TCP/IP Printers*. The TCP/IP Printer Configuration window appears.
2. Fill in the fields according to TCP/IP conventions. Refer to your network operations manual and Appendix D, *Running on a Network* for more detailed information.

Figure 2.16
TCP/IP Printer Configuration Window

TCP/IP Printer Configuration				
Modify	Add	Delete		
Name	Printer	Description	Host	Queue
Number1	I	Configuration 1	Admin	Finance

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Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Configure Phone List

You can add, delete or modify phone numbers and the related dialup parameters for each. To edit the phone directory:

1. Choose *Configure Phone List* to set up or change the telephone list for the modems. The Directory Configuration window opens, showing the names and corresponding telephone numbers that can be used with the DIAL command.

Figure 2.17
Directory Configuration Window

Directory Configuration		
Modify	Add	Delete
Name	Number	Description
Offshore2	1-813-555-1212	Offshore Platfm #2, Gulf of Mexico
Offshore5	1-813-555-1234	Offshore Platfm #5, Gulf of Mexico
Station1	1-813-555-4267	Pump Station #1, Fort Nelson, BC

43651

Adding a Phone Number

2. Choose *Add*. The Add Phone Directory window appears.

Figure 2.18
Add Phone Directory Window

Add Phone Directory

Name:

Number:

Description:

Connection Timeout: seconds

Connection Event Scheduler

Success:

Fail:

Hangup:

Communication Link Overrides

Baud Rate: Data Bits: Stop Bits: Parity:

Accept <+> Cancel <Esc>

43652

3. Fill in the fields as follows:

- Name

Specify a name to identify this entry in the directory. This will be used in the DIAL command.

- Number

Type the telephone number that will be dialled automatically. Use a format (spaces, dashes, commas, etc.) that will be accepted by your modem. ControlView does not check the data you type in this field.

- Description

Type in a free form description of the directory entry.

- Connection Timeout

Type the maximum number of seconds to wait for a link to be established after dialing. Type a number in the range 5 - 6000. The default is 30 seconds.

- Success

Enter a ControlView command or macro that will be executed when the dial is successfully completed.

- Fail

Enter a ControlView command or macro that will be executed if the dial fails.

- Hangup

Enter a ControlView command or macro that will be executed when the connection is lost due to a remote hangup, or on an activity timeout. The hangup command or macro is not executed when the hangup is local.

- Communication Link Overrides (Baud Rate, Data Bits, Stop Bits, Parity)

Enter these fields, if, for this particular communication link, you need to override the communication settings on the Device Configuration window. Some remote dialup destinations have specific communication requirements.

4. Choose *Accept* to add the directory entry.
5. Modify or delete directory entries by highlighting them, then choosing either *Modify* or *Delete*.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Configure ControlView Nodes

Choose *Configure ControlView Nodes* to name and configure ControlView nodes on a local area network (LAN). Each ControlView node must be given a unique name by which it will be recognized whenever it is logged on, and have its configuration parameters defined.

Networking is a ControlView option; refer to the *Networking User Manual* for more information.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
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Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Configure Nodes

In the Node Configuration window, each programmable controller that ControlView will communicate with is given a name and an associated configuration. The programmable controller is then referred to by that name. The node name carries with it all the configuration information, so attributes such as programmable controller type, station number, which network it's on, etc., needn't be repeated.

Important: Refer to the manual for the I/O driver software you are using for complete details on addressing syntax, and how ControlView supports specific models of programmable controllers.

Configure Scan Classes

About Scan Classes

To "scan" is to periodically read the value found at a programmable controller address.

The scan *period* is how often the address is scanned. ControlView has eight scan classes for regular tags, and three scan classes for string tags. Each scan class has its own foreground and background scanning period and can have as many as 2,000 tags assigned to it.

The period number sets how many seconds elapse between scans. A setting of 1 scans programmable controller addresses once a second. The longest period is 99,999 seconds (nearly 28 hours).

0 seconds means no wait time—the scan will be performed as often as the network can provide information. Use the 0 period with caution, since the performance of background tasks (such as Alarming) can be compromised when the foreground task tries to scan at top speed.

When a tag's value is required by a foreground application, (such as a trend plot or Mouse GRAFIX display), it is scanned at the "foreground" scan rate. When a tag's value is required for a background application, (such as Alarming, Event Detection, Data Logging, and Derived Tags), it is scanned at the "background" scan rate.

Important: A tag is not scanned at all if it is not required by a background or foreground task that is currently running. System overhead is greatly reduced by updating only those tags that are in use.

Any tag in the database - except local tags - can be assigned to one of the appropriate scan classes. When setting up the scan classes, consider what scan periods will be best for your application - a frequent scan for tags representing fast-moving devices, and less frequent scanning for tags representing things that are slow to change.

A tag with no scan class will never be updated.

The scan class setting is loaded when the database is loaded. If you change the scan class of a tag while the tag's database is loaded, you must unload and reload the database for the change to take effect.

Keep in mind that any tag value in the database is only as accurate as the last scan. If scanning is too slow, the information isn't useful. If all scanners are set to high speed scan, network traffic may increase to the point where system performance suffers. The concept of scan classes allows you to optimize your system's performance—to provide high-speed scanning where required, and to save on system resources by using lower scan frequencies wherever acceptable.

1. Choose *Configure Scan Classes* from the Configuration menu and the Scan Class Configuration window appears.

The scan classes S1, S2 and S3 are for string tags.

Figure 2.19
Scan Class Configuration Window

Scan Class Configuration			
Scan Class	Foreground Period (sec)	Background Period (sec)	Device Class
A	5	30	ControlView
B	10	60	ControlView
C	2	5	Allen-Bradley
D	5	60	Allen-Bradley
E	5	5	Allen-Bradley
F	30	60	Allen-Bradley
G	2	5	Modicon
H	60	60	Modicon
S1	2	5	Allen-Bradley
S2	5	5	Allen-Bradley
S3	50	60	Allen-Bradley

Accept <+> Cancel <Esc>

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2. Fill in the following fields to set up scanning:

▪ Foreground Period (sec)

Choose the scan rate to use when the tag's value is required by a foreground application—a Mouse GRAFIX window or a Trend graph.

▪ Background Period (sec)

Choose the scan rate to use when the tag's value is required by background tasks such as Alarming, Event Detector, and Derived Tags.

▪ Device Class

Use separate scan classes for different highway types. A point in a Modicon programmable controller, for example, cannot belong to an Allen-Bradley scan class.

3. Choose *Accept* to save the information in the Scan Class Configuration window to disk, and to return to the Setup Menu.

4. If a database was loaded when you changed the scan classes, unload the database and load it again.

Edit Database

About Databases

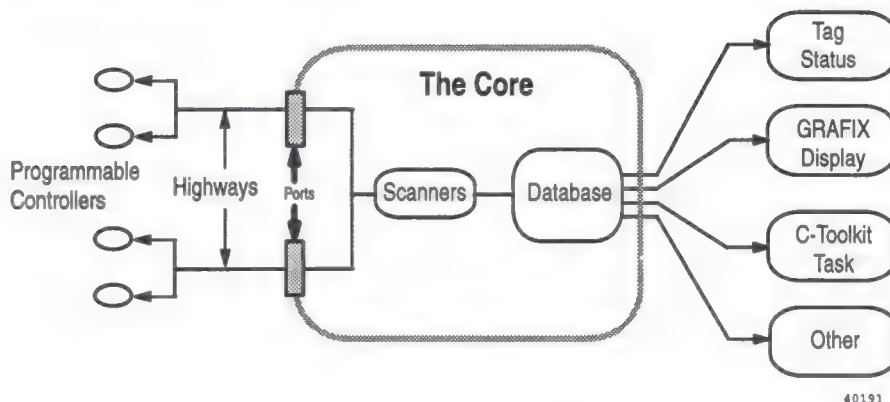
The database is the heart of ControlView. It names and organizes all monitored points. Mouse GRAFIX windows use the database values to control the display; Data Logger stores database values on disk; Alarming monitors database values and compares them to “acceptable” limits.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database

Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Figure 2.20
An Overview of ControlView



When a database is loaded, it is actually split into two parts. The unchanging information, such as tag names and addresses, is kept on disk in the *static database*. The information that may be constantly changing, such as the tags' values, communication status, and alarm status, is kept in computer memory in the Current Value Database, the CVD. This splitting of the database allows an application to have a very large database (larger than would fit in active memory), with fast response time.

You can create a database with the Database Editor, or by importing tag information from another database program. ControlView includes Database Import/Export utilities, which are described in Appendix C, *Database Import/Export*.

Points, Tags, Groups and Naming Conventions

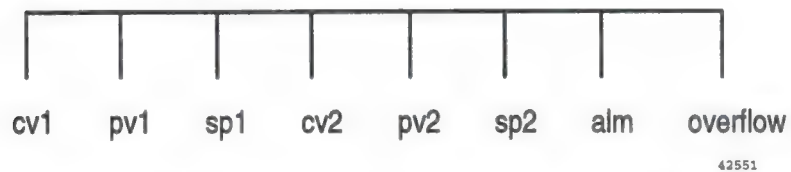
A *point* references a single address in a programmable controller; it corresponds directly to a programmable controller memory location. A database can contain up to 10,000 analog/digital points and 1,000 string points for a total of 11,000 points.

There are three types of tags: digital, analog and string. *Digital points* refer to individual bits within the programmable controller's data table. They can have one of two values, 0 or 1. These can be used to represent the positions of switches, contacts and relays which can only be on or off. *Analog points* can have a range of numerical values, and can represent more complex states, such as the position of rotary controls or temperature. *String tags* consist of a string of characters, up to 82 characters long.

Example: A Simple Database Structure

A small database with eight points is illustrated below:

Figure 2.21
Database with No Groups



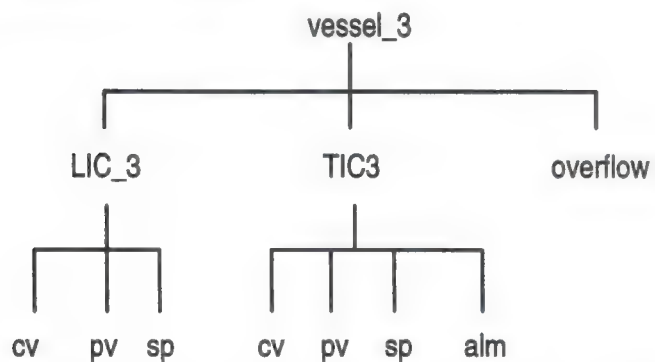
This database has two setpoints (sp1 and sp2), two inputs (pv1 and pv2), two control variables (cv1 and cv2) and two bits that indicate alarms (alm and overflow).

This simple “flat” database structure only works well for a small database. For a larger database, it is more efficient to group the points into a hierarchical structure, as illustrated below:

Example: A Database with Grouping

This second database still has the same eight points, but it introduces three *groups*: some points are in the group LIC_3, others are in the group TIC3. The groups LIC_3 and TIC3 are themselves in the group vessel_3.

Figure 2.22
Database Showing Grouping



A group is a way of organizing the points in a database. You can use groups to make it easier to control the plant, and to make it easier to think of the database: you can group all similar devices—you can group areas of the plant floor—and you can use groups to make wild card searches and wild card commands easier (see the section Naming Conventions, later in this chapter).

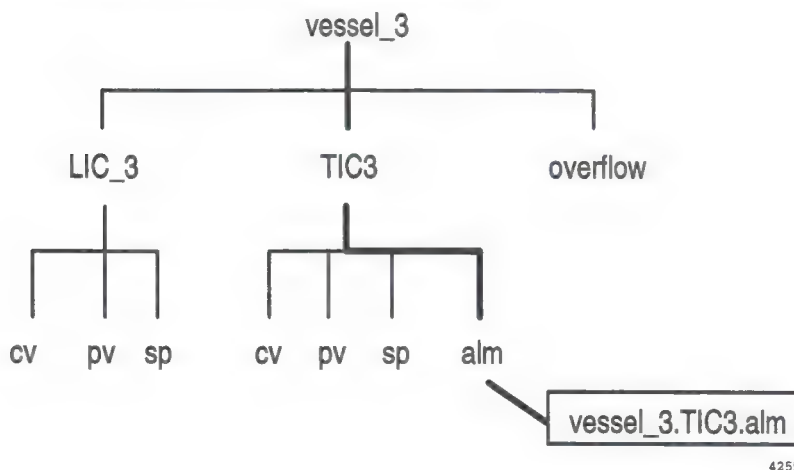
Notice that the first example has a point named cv1 and one named cv2, while in the second example there are two points called cv. When groups are used, you have to refer to a point by its group name as well its point name, so the extra numbers are unnecessary.

A *tag* name combines the point name and the group name into a single name. In a tag name, group names and point names are separated by a period.

Example: Naming a Tag

In the figure below, the tag name for the point named “alm” is “vessel_3.TIC3.alm”.

Figure 2.23
A Tag Name Combines Point and Group Names



Structure Tags

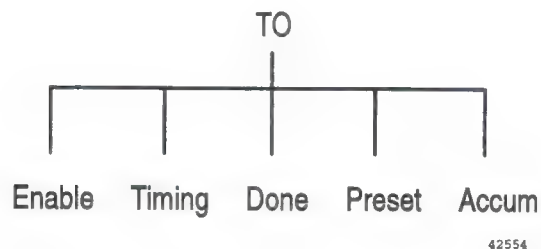
Structure tags, like groups, allow you to organize tags in the database. As described above, groups can refer to points in numerous programmable controllers. Structures, on the other hand, organize tags that typically refer to one area of memory within a single programmable controller's data table.

When defining a structure tag in the database, you must identify a base address that points to the beginning of the structure, and then identify each member in that structure by specifying its offset from that base. These structure members are analog, digital or string points. ControlView calculates the final PLC address by adding the base and offset together.

To define a number of similar structure tags, create the first one and then clone it. Then change the base address of the copy and all the elements point to a different PLC or PLC memory location. In contrast, when a group is cloned, the addresses of all its elements remain unchanged.

Example: Using Structure Tags

You've designed the PLC program to use two timers at addresses T4:0, and T4:1. One way to represent these elements in the database would be to define two structure tags. Start by creating one structure tag for the timer at T4:0 and defining digital or analog tags for each member within the timer, as illustrated below.



The structure tag would have a base address of T4:0. The structure elements would have offset addresses of .EN, .TT, .DN, .PRE, and .ACC respectively.

Once this structure has been defined, you could clone it, changing the structure tag's name to T1 and the base address to T4:1. The database would now define both timers.

Local Tags

A local tag is a tag that is not associated with any programmable controller and can be analog, digital or string. Local tags are most commonly used for temporary storage of values, such as derived tag values (calculated by the Derived Tags option) or values returned by a C-Toolkit program. Local tags can also be used for testing applications before using them with actual programmable controllers.

Local tags don't belong to any scan class, since their value doesn't come from a programmable controller. Their value cannot be changed by scanning. A local tag's value at startup is defined by its Initial Value setting in the Configure Point window; from then on its value can be changed with the SET and RAMP commands, Derived Tags, Event Detector, a C-Toolkit program, a Mouse GRAFIX display, or unsolicited messages.

Naming Conventions: Points and Groups

Point names and group names can be up to nine characters long, and must follow these rules:

- names can contain the following characters:
 - A to Z
 - 0 to 9
 - the underscore (_)
- names cannot start with a number
- the entire tag name cannot exceed 20 characters (including periods), so the number of levels must be planned ahead of time, and group and point names must be kept to appropriate lengths

Wild Card Characters

Wild card characters can be used when searching for information in the database or getting information on tags or groups of tags. Wild card characters are powerful short cuts which use similarities or differences in tag names to create groups of tags.

For example, when you create alarmable tags, you can give them names ending with ".alm". Then you can use wild cards to find the status of every tag whose name ends with ".alm".

Consider wild card conventions carefully before you build the database. Only a well-designed database can take full advantage of wild cards. The wild card characters are:

Table 2.E
Wild Card Characters

Character	Meaning
?	matches any single character
*	all tags in one level of the database
+	when the + follows a group name, all points in the current group or groups it contains when the + follows a structure name, all points in the current structure or structures it contains when the + precedes a point name, all tags that end with that point name when the + is by itself, all tags in the database

Examples: Using Wild Cards to View Tag Status

Choosing *View Tag Status* under Tags in the Actions menu brings up a data-entry window containing the prompt:

status of which tag?

Since the STATUS command can display up to 100 tags, typing the following entries would give the following results:

Type:	To return status of:
+	First 100 tags
+ .ALM	First 100 tags with a name ending with .ALM
WEST. * .ALM	First 100 tags with a name starting with WEST. and ending with .ALM and having a single name in between (includes WEST.MTR.ALM or WEST.TIC_23.ALM, but not WEST.CONVR.MTR.ALM)
+ .00?	First 100 tags with a name ending with .00 and another character, such as .002, .003, .00X

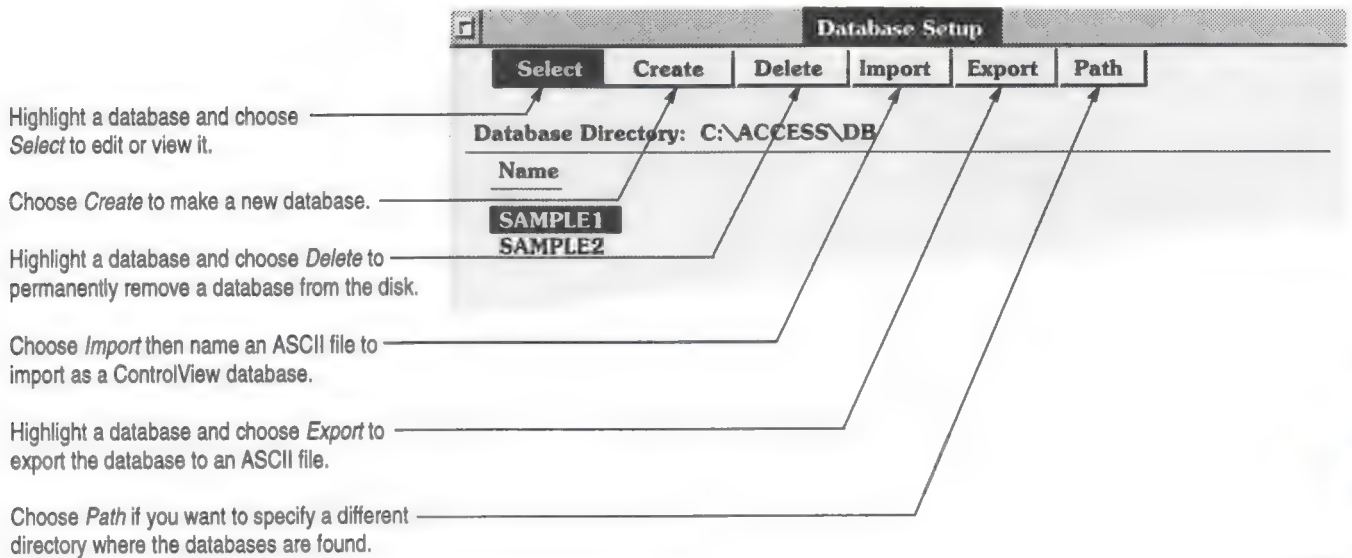
Editing a Database

To edit a new or existing database:

1. Choose *Edit Database* from the Configure menu. A list of available databases pops up.

2. Choose *New* to create a new database. The Database Setup window appears.
3. Choose *Create* to start a new database. There will be a pause as the database is created.

Figure 2.24
Database Setup Window



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The Database Editor starts up at the Database Setup window. The names of the available databases in the current directory are listed. You can choose from the following actions:

- **Creating a Database**

To create a database, choose *Create*. You'll be asked to name the new database. The name can be 11 characters long, and can contain letters, numbers, and the underscore (_) character. After waiting a few seconds while the database is created, you'll return to the Database Setup window. Highlight the new (empty) database and choose *Select*.

- **Selecting a Database**

You must select a database before you can modify or edit it. Move the cursor to the desired database, and choose *Select*. When you've selected a database, the Configure Database window appears.

- Deleting a Database

To delete a database, highlight the database name and choose *Delete*. A warning pops up; press **Enter** to delete, or **Esc** to avoid deleting the database. Deleting a database erases it from the disk.

- Importing a Database

To import an ASCII file from within the database editor, choose *Import*. The Database Import Utility window appears. You'll be asked to name the new database, and various other import parameters. When you choose *Accept*, the import starts.

- Exporting a Database

To export a database to an ASCII file, select the database and choose *Export*. The Database Export Utility window appears. You'll be asked to name the destination files and various other export parameters. When you choose *Accept*, the export starts.

Important: It is strongly recommended that you create a backup copy of your database, using the export option.

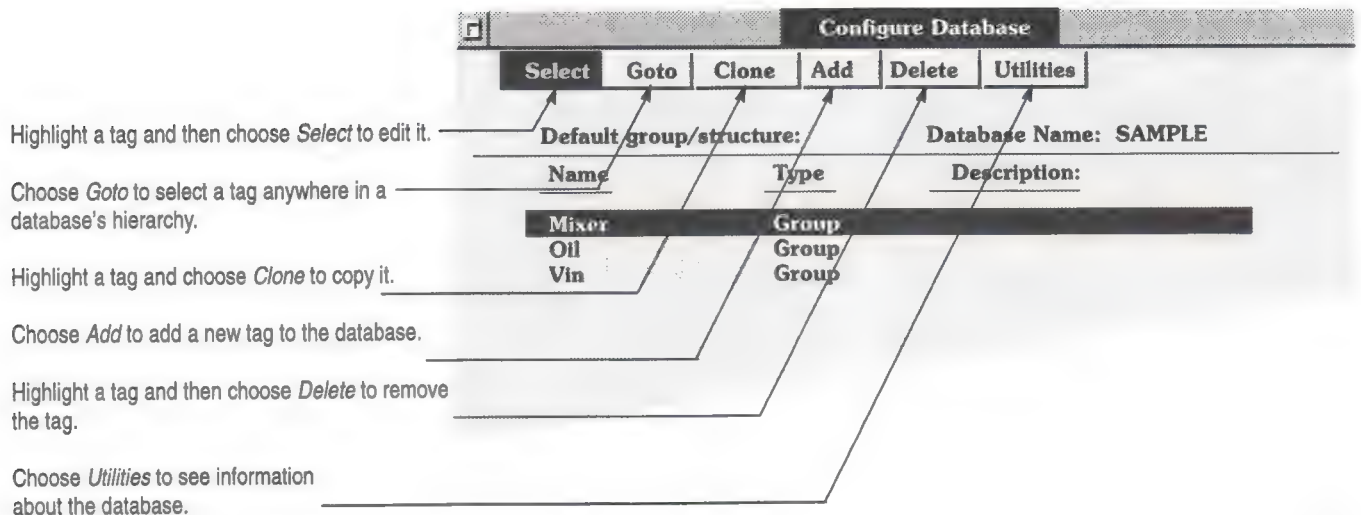
- Changing the Database Directory

The disk directory for the databases is displayed at the top of the window. To change the directory where the databases are found, choose *Path* and type in the new disk directory.

The Configure Database Window

Highlight a database name and choose *Select*, and the Configure Database window appears. In this window you create or edit tags, one by one. For each tag, you will first select a tag from the list, and then decide which of several actions to perform.

Figure 2.25
Configure Database Window



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The tags in the database are displayed with their descriptions. Not all tags are displayed: some tags are in groups, and only the tag group name is listed. Above the tag list are two headings. "Default Group" is blank unless you've chosen to look at a group of tags; in that case the name of the tag group is listed. "Database Name" names the database containing the tags in the list.

The actions that you can perform are:

- **Select**

Highlight a tag and choose *Select*. The Configure Point window appears with the details of that tag. Choose *Modify* to edit the tag.

If a group or structure is selected, the "Default group/structure" name changes, and the list of tags in the group is displayed. Press **Esc** to get back to the previous level in the database.

- **Goto**

Choose *Goto*, then specify a full tag name. The Configure Point window opens with that tag's information. This is a useful shortcut when there are many tags in the database.

- **Clone**

Choose *Clone* to copy the selected tag and add the duplicate tag to the current group or structure. Cloning a group or structure duplicates all the elements of that group or structure. You will be prompted for the new name (up to nine characters), and then you need only change the necessary details.

- **Add**

Choose *Add* to create a tag (point, group, or structure) in the database. You will be prompted for the name of the tag (up to nine characters), and the type (analog, digital, group or structure). If the type is “group”, the group is created and the Configure Database window re-appears with the new group name in the “Default group/structure” field.

- **Delete**

To remove a tag from the database, highlight the tag and choose *Delete*.

- **Utilities**

Choose *Utilities* to bring up a window of information about the current database:

- date of last modification
- number of points in the database
- number of digital points
- number of analog points
- number of string tags
- number of structure tags
- number of points assigned to each scan class
- number of points monitored for alarms

Defining a Group

To create a group tag:

1. Choose *Add* from the Configure Database menu. The Add Tag window appears.

2. Type the group name in the *Tag name* field and specify "Group" in the *Tag type* field. Choose *Accept* when finished. You'll be returned to the Configure Database window.
3. To add elements to this group, highlight it and choose *Select*. The Configure Database window will display the group's name in the *Default group/structure* field.

Configuring Analog Points

When you create or edit an individual tag (by choosing *Select*, *Goto*, *Clone*, or *Add*), the Configure Point window opens.

There is a Configure Point window for configuring analog points, one for digital points and one for string tags.

Figure 2.26
Configure Analog Point Window

The screenshot shows the 'Configure Analog Point' window. At the top, there are three tabs: 'Modify', 'Alarms', and 'Delete'. Annotations on the left point to these tabs: 'Choose *Modify* to edit the tag.' points to the 'Modify' tab, 'Choose *Alarms* to define any alarms for the tag. The Alarms option must be installed.' points to the 'Alarms' tab, and 'Choose *Delete* to remove the tag from the database.' points to the 'Delete' tab. The main form contains the following fields:

Default group/structure:		Database name: SAMPLE
Point Name:	Tag2	Access (A-P): #
Description:	This tag refers to Tag3	
Address Type:	CtrlView	Address: Tag3
Node Name:	CV2	
Scan Class (A-H):	A	Data Type: Default
Minimum:	1	Maximum: 100
Scale:	1	Offset: 0
Initial Value:	0	Units: 1
Accept <+> Cancel <Esc>		

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To define an analog point, fill in the following fields:

- Description

The text you use to describe the point (32 characters max.) can be used by the Tag Status display and shown on an operator window. This is the description that is displayed in the Configure Database window.

■ Address Type

This identifies the type of programmable controller the tag addresses (e.g. PLC-2, etc.). For local tags specify "None". If the local tag is intended to receive unsolicited messages, enter PLC2 or PLC3. For more information on unsolicited messages, see the *Allen-Bradley Drivers User Manual*.

■ Address

This defines the physical memory location in the programmable controller. The syntax depends on the programmable controller's addressing convention. For more details on address formats refer to the user's manual for the driver software you are using. Leave this field blank for local tags unless the local tag is intended to receive unsolicited messages. For more information on unsolicited messages, refer to the *Allen-Bradley Drivers User Manual*.

■ Node Name

Enter the node name for the programmable controller that this tag is addressing, as defined in the Node table. Leave this field blank for local tags.

■ Scan Class

Enter the scan class that this tag belongs to (A to H). *If this field is blank, the tag will never be scanned.* Leave this field blank for local tags.

■ Data Type

Data Type determines the format of the tag value. The data type should match the data format in the programmable controller (usually indicated by the programmable controller file type). The choices are:

Table 2.F
Data Types

Data Type	Description
DEFAULT	uses the data type for the PLC file that the point is in
3BCD	3 digit BCD
4BCD	4 digit BCD
BINARY	16 bit unsigned
FLOAT	Floating point (32 bit)
INTEGER	16 bit signed
LONG	Long integer (32 bit)
BYTE	8 bit unsigned

- **Minimum and Maximum**

The Minimum and Maximum fields establish the minimum and maximum possible values for the tag. They ensure that values outside a specified range cannot be written to the programmable controller. However, values outside the range can still be read from the programmable controller.

- **Scale and Offset**

The Scale and Offset fields modify the “raw data” that comes from, and goes to, the programmable controller before it is saved in the Current Value Database. Scale is a multiplication factor: a number from the programmable controller is multiplied by the value of scale. Offset is a fixed value: a number from the programmable controller is added to the offset. The default values are scale = 1 and offset = 0. With these values, a programmable controller value will be saved in the CVD unmodified.

Values from the programmable controller are first scaled, then added to the offset. When a number is written to the programmable controller, the process is reversed: the offset amount is subtracted, and the scale number is used for division. This ensures that the correct, unmodified value is sent to the programmable controller

Important: When the tag value is set from the command line or from a data entry field on a graphic, a scale value of 0 will always result in an error.

- **Initial Value**

This number establishes the tag’s starting value. It is useful for local tags only; in non-local tags the initial value setting would be replaced by a PLC value when it is scanned.

- **Units**

Type in a text label, for display only, which describes the units in which the tag value is measured (e.g. gallon, PSI, min., sec.), 6 characters maximum.

- **Access**

The access code (A through P) establishes the security restrictions on the tag. The default code is *, which allows complete access to the tag. If security is restricted, the tag value cannot be changed by operators without the proper security classification. For more information on security, see the section *Edit Security* in this chapter.

Configuring Digital Points

The Configure Digital Point window appears when you select a digital tag in the Configure Database window.

Editing a digital point is similar to configuring an analog point but digital points only have two states, On and Off, rather than a range of values.

Figure 2.27
Configure Digital Point Window

Choose *Modify* to edit the tag. →

Choose *Alarms* to define any alarms for the tag. The Alarming option must be installed. →

Choose *Delete* to remove the tag from the database. →

Configure Digital Point

Modify Alarms Delete

Default group/structure: _____ Database name: **SAMPLE**

Point Name: Access (A-P): ☐ *

Description:

Address Type: Address:

Node Name:

Scan Class (A-H):

OFF Label: ON Label:

Initial Value: Units:

Accept <+> Cancel <Esc>

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In the Configure Digital Point window the following fields are identical to the Configure Analog Point window, and are described in that section:

- Description
- Address Type
- Address
- Node Name
- Scan Class

- Access
- Initial Value (for digital tags, the Initial Value must be the On or Off label specified for the point)
- Units

The following fields are unique to digital tags:

- Off Label

Text that describes the “off state” (value = 0) of the tag. This is used for display purposes, and when writing to the programmable controller. Examples of Off labels could be: Off, Closed, Safe. The label can contain up to 10 characters.

- On Label

Text that describes the “on state” (value = 1) of the tag. This is used for display purposes, and when writing to the programmable controller. Examples of On labels could be: On, Open, Running. The label can contain up to 10 characters.

Configuring String Tags

1. Choose a string tag in the Configure Database window. The Configure String Tag window appears.

Figure 2.28
Configure String Tag Window

Configure String Tag

Modify Initial Values Delete

Default group / structure: Database name: Test

String Tag Name : Barcode Access (A-P) : *

Description : Product Barcode

Address Type : PLC5 Starting Address : N7:0

Node Name : Tester1 Scan Class (S1, S2, S3) : S1

Length : 10

Accept <+> Cancel <Esc>

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2. In the Configure String Tag window the following fields are identical to the Configure Analog Point window, and are described in that section:

- Description
- Address Type
- Node Name
- Scan Class (for string tags, the scan class must be S1, S2 or S3)
- Access

The following fields are unique to string tags:

- Starting Address

The address of the first character in the string. Refer to the *A-B Drivers User Guide* for information about entering this field.

- Length

Type a number in the range 1 - 82 to specify the length of the string tag.

3. Choose *Accept* to create the string tag.

4. To specify a starting value for the string tag, choose *Initial Values* from the menu at the top of the window. The String Tag Initial Value window appears.

Figure 2.29
String Tag Initial Value Window

String Tag Initial Value

Modify Set All

String Tag name: Barcode Database name: Test

Address: Tester1::N7:0 Length: 10

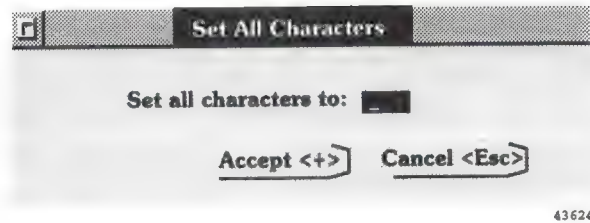
5000013206

Accept <+> Cancel <Esc>

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5. Type in the starting value for the string tag. It must not be longer than the length specified on the previous window. Characters may be entered as escape sequences, by using a preceding backslash. For example, the character > can be entered as the escape sequence \3E. Any character may be entered. The backslash character \ can be entered as a double backslash \\ or with the escape sequence \5C.
6. If all characters in the string are identical, (for example "jjjjjjjjjj") choose *Set All* from the menu at the top of the window. The Set All Characters window appears. Type in the character, then choose *Accept* to enter the characters in the String Tag Initial Value window.

Figure 2.30
Set All Characters Window



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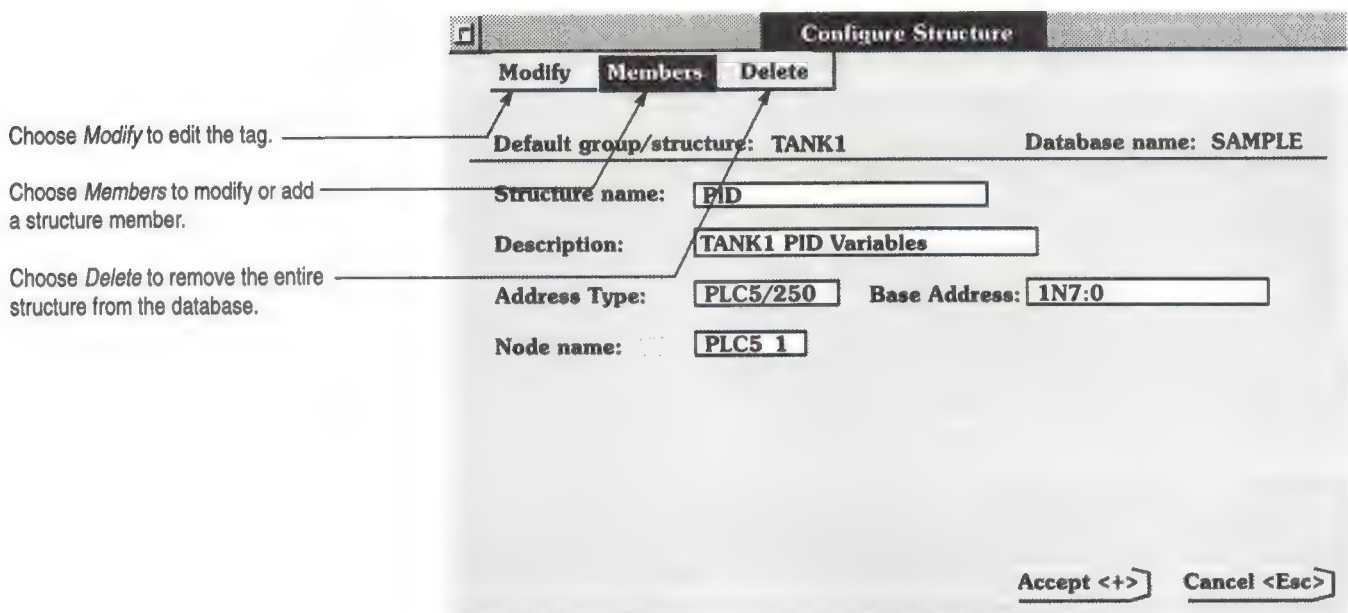
7. Choose *Accept* to save the initial value setting.

Defining a Structure Tag

To create a structure tag:

1. Choose *Add* from the Configure Database menu. The Add Tag window appears.
2. Type the structure's name in the *Tag name* field and specify "Structure" in the *Tag type* field. Choose *Accept* when finished. The Configure Structure window appears.

Figure 2.31
Configure Structure Window



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3. To define the structure, fill in the following fields:

- Description

The text you use to describe the point (32 characters max.) can be used by the Tag Status display or Tag Status and shown on an operator window. This is the description that is displayed in the Configure Database window.

- Address Type

This identifies the type of programmable controller the tag addresses (e.g. PLC-5/250, PLC-2, etc.).

Important: “CtrlView” is not a valid address type for a structure’s base address.

- Base Address

This defines the physical memory location in the programmable controller that marks the beginning of the structure. The syntax of this address depends on the programmable controller’s address type.

Important: The base address must not contain a bit or mnemonic offset.

For more details on address formats refer to the user’s manual for the driver software you are using. Leave this field blank for local tags.

- Node name

Enter the node name for the programmable controller that this tag is addressing, as defined in the Node table. Leave this field blank for local tags.

4. Choose *Accept* or press + when you’ve finished defining the structure.

Configuring Analog Structure Members

1. To add members to this structure, choose *Members* from the Configure Structure menu. You’ll be returned to the Configure Database window with the new structure name displayed in the *Default group/structure* field.

2. To add an analog structure member choose *Add* from the Configure Database menu. Give the tag a name, specify analog, and choose *Accept*. The Structure Analog Point window appears.

Figure 2.32
Structure Analog Point Window

Structure Analog Point

Modify Alarms Delete

Default group/structure: TANK1.PID Database name: SAMPLE

Point Name: TANK1.PID.PV Access (A-P): A

Description: Tank 1 Process Variable

Address Type: PLC5/250 Base Address: 1N7:0

Node Name: PLC5_1 Address offset: 3

Scan Class: A Data Type: Default

Minimum: 0 Maximum: 1000

Scale: 1 Offset: 0

Initial Value: 0 Units: litres

Accept <+> Cancel <Esc>

42260

This window is the same as the Configure Analog Point window, described earlier, except:

- the *Address Type* and *Node Name* fields display information that was defined for the entire structure
- the *Address* field is replaced with two new fields:
 - Base Address, which displays the structure's base address
 - Address offset, which you must fill in with the member's address offset

The address offset, combined with the structure's base address define the point's address. The offset may contain file, element, or mnemonic components.

The table below shows samples of valid base and offset addresses for some Allen-Bradley programmable controllers.

Table 2.G
Sample Base and Offset Addresses

Address Type	Base Address	Offset	Actual Address
PLC2	100	3/2	103/2
PLC3	B3:3	10:3/3	B13:6/3
PLC5	N7:0	2	N7:2
PLC5	B3:3	3/3	B3:6/3
PLC5/250	1PD3:2	2:4.DATA[2]	1PD5:6.DATA[2]

See the appropriate drivers user's manual for complete description of the offset's syntax.

Configuring Digital Structure Members

To add a digital structure member:

1. Choose *Add* from the Configure Database menu.
2. Give the tag a name, specify digital, and Choose *Accept*. The Structure Digital Point window appears.

Figure 2.33
Structure Digital Point Window

Structure Digital Point

Modify **Alarms** **Delete**

Default group/structure: TANK1.PID Database name: SAMPLE

Point Name: TANK1.PID.VALVE Access (A-P): ☐

Description: Tank 1 Valve 1.

Address Type: PLC5/250 Base Address: 1N7:0

Node name: PLC5_1 Address offset: 0/0

Scan Class: ☐ A

OFF Label: closed ON Label: open

Initial Value: closed Units:

Accept <+> Cancel <Esc>

42259

This window is the same as the Configure Digital Point window, described earlier, except:

- the *Address Type* and *Node name* fields display information that was defined for the entire structure
- the *Address* field is replaced with two new fields:
 - Base Address, which displays the structure's base address
 - Address offset, which you must fill in with the member's address offset

The address offset, combined with the structure's base address define the point's address. The offset may contain file, element, and bit or mnemonic components. See the appropriate drivers user's manual for complete description of the offset's syntax.

Configuring String Tag Structure Members

To add a string tag structure member:

1. Choose *Add* from the Configure Database menu.
2. Give the tag a name, specify string, and choose *Accept*. The Structure String Tag window appears.

Figure 2.34
Structure String Tag Window

Structure String Tag

Modify | Initial Values | Delete

Default group / structure: **BARCODE** Database name: **SAMPLE**

String Tag Name : **BARCODE.PRODC** Access (A-P): *****

Description : **Product Code**

Address Type : **PLC5** Base Address : **N7:10**

Node Name : **MACHINE1** Address Offset : **0**

Scan Class : **S1**

Length : **15**

Accept <+> Cancel <Esc>

43 625

This window is the same as the Configure String Tag window, described earlier, except:

- the *Address Type* and *Node Name* fields display information that was defined for the entire structure
- the *Address* field is replaced with two new fields:
 - *Base Address*, which displays the structure's base address
 - *Address Offset*, which you must fill in with the member's address offset

The address offset, combined with the structure's base address define the point's address. The offset may contain file, element, or mnemonic components. See the appropriate drivers user's manual for complete description of the offset's syntax.

Defining a Local Tag

To define a tag as "local", leave the following fields blank:

- Node Name
- Scan Class

If the local tag is digital, fill in the following fields:

- Off Label
- On Label
- Initial Value

Defining a Local Tag to Receive Unsolicited Messages

One use for local tags is to receive “unsolicited messages” from programmable controllers capable of sending such messages. Normally ControlView ignores the *Address Type* and *Address* fields for local tags. However, if the local tag will be used to receive unsolicited messages, you must fill in:

- Address Type
- Address

Unsolicited messages are a feature of certain Allen-Bradley programmable controllers. For more information on receiving unsolicited messages, refer to the *Allen-Bradley Drivers User Manual*.

Importing a Database

You can import a ControlView database from ControlView’s database editor as follows:

1. Choose *Edit Database* under *Configure* in the Setup menu. Choose *new* from the popup list. The Database Setup window is displayed.
2. Choose *Import* from the menu bar at the top of the Database Setup window. The Database Import Utility window is displayed.

Figure 2.35
Database Import Utility Window

Database Directory: C:\ACCESS\DB

Database name:

Import Tags? ☒ Yes ☐ No Import Alarm Data? ☐ Yes ☒ No

Import Data file name:
C:\ACCESS\UTIL\

Import Specification file name:
C:\ACCESS\UTIL\DBS200.SPC

Alarm Import Data file name:
C:\ACCESS\UTIL\

Alarm Import Specification file name:
C:\ACCESS\UTIL\ALM200.SPC

Accept <+> Cancel <Esc>

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3. Fill in the fields in the Database Import Utility window:

- Database name

Type in the name you want for the database after it is imported. If the database already exists and you are importing alarm data only, type in the name of the database that the alarm data is to be appended to.

- Import Tags?

Choose *Yes* or *No*, depending on whether or not you have already imported the tag data for the database. If the database already exists and you are importing alarm data only, choose *No*.

Important: You cannot import tag data into an existing database, only alarm information.

- Import Alarm Data

Choose *Yes* or *No*, depending on whether or not you want to import the alarm data for the database.

- Import Data file name?

This is the name of the file to be imported. Whatever path was specified in the *Enter new Import Data file directory* field of the Configure Database Directory window will appear here. Add the file name. Be sure the file conforms to the format specifications in Appendix C of the *ControlView Core User Manual*.

If you are importing a previously exported file, the file extension is **.DBS**

If you change the name of the directory, the change will be temporary, for this one import operation only. The next time you open this window, the default directory will revert to what is defined in the Configure Database Directory window.

Important: Whenever you configure a pathname, be sure to start with the drive letter. This is absolutely essential when running ControlView in a multi-drive environment.

- Import Specification file name

Type: **DBS200.SPC** This is a data file in the \ACCESS\UTIL directory that describes the database structure to the import utility. **Do not alter or delete this file.**

- Alarm Import Data file name

If you are importing alarm data, type in the name of the file to import. Be sure the Alarming option has been installed and the file format conforms to the specifications in Appendix B of the *ControlView Alarming User Manual*.

If you are importing a previously exported file, the file extension is **.ALM**

Any changes you make to the directory name in this field will be temporary. The directory named in the Configure Database Directory window will appear here the next time the window is opened. Any permanent changes must be made in the Configure Database Directory window.

- Alarm Import Specification file name

Type: **ALM200.SPC** This is a data file in the \ACCESS\UTIL directory that describes the database structure to the import utility. **Do not alter or delete this file.**

4. Choose *Accept* and follow the instructions on the screen. Several messages appear allowing you to cancel the import. The importing is finished when the last message disappears. It may take several minutes to import the database.

Exporting a Database

Important: It is strongly recommended that you use the export option to create a backup copy of your database.

You can export a ControlView database to an ASCII file as follows:

1. Choose *Edit Database* under Configure in the Setup menu. Choose *new* from the popup list. The Database Setup window is displayed.
2. Highlight the database to be exported and choose *Export* from the menu bar at the top of the Database Setup window. The Database Export Utility window is displayed.

Figure 2.36
Database Export Utility Window

Database Export Utility

Database Name: SALAD

Destination file name (w/o extension):

C:\ACCESS\UTIL\

Export format:

Separate files? No

Column Aligned? No

Optimize Import? No

Field Delimiter? No

Delimiter Character? ☐

Accept <+> Cancel <Esc>

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The name of the database selected for export will appear in the Database Name field in the upper right hand corner.

3. Fill in the fields:

- Destination file name (w/o extension)

Type in the name, without extension, of the file that you want the database information exported to. The tag data file extension will be .DBS. Alarm data will be exported to a file with the same name and the extension .ALM.

You can change the default directory in this field, but the change will only be temporary, for this one export operation only. Permanent changes must be made in the Configure Database Directory window.

Important: Whenever you configure a pathname, be sure to start with the drive letter. This is absolutely essential when running ControlView in a multi-drive environment.

- Separate files?

Choose *Yes* or *No*, depending on whether or not you want separate files to be created for group tags, analog tags, digital tags and structure tags. The default is *No*, meaning that only two files will be created: one containing tag data, and one containing alarm data, (if there is any). If you choose *Yes*, these eight tag data files will be created, even if you do not have all the data types in the database:

<i>outfile.grp</i>	group tag information
<i>outfile.dig</i>	digital tag information
<i>outfile.ana</i>	analog tag information
<i>outfile.stg</i>	string tag information
<i>outfile.str</i>	structure tag information
<i>outfile.std</i>	digital structure member
<i>outfile.sta</i>	analog structure member
<i>outfile.sst</i>	string structure member

And these two files will be created for alarm information:

<i>outfile.aa</i>	analog alarm information
<i>outfile.ad</i>	digital alarm information

You cannot import these files unless you combine them into two ASCII files as follows:

- one file containing the data from the 8 tag files, listed in the sequence shown above
- one file containing the data from the 2 alarm files

Example: Using DOS to Combine Files

In DOS:

To combine the 8 exported tag files into one ASCII file called TAGS, type:

```
copy fname.grp + fname.dig + fname.ana + fname.stg  
+ fname.str + fname.std + fname.sta + fname.sst  
TAGS
```

Important: You must type the filenames in this sequence.

To combine the 2 exported alarm files into one ASCII file called ALARM, type:

```
copy outfile.aa + outfile.ad ALARM
```

- Column Aligned?

Choose *Yes* or *No* to determine whether or not the exported data will be placed in column format that can be read by other programs like dBASE™ and Lotus 123™. The default is *No*; this means the file will be exported in “free form”. Free form is the format used by the Database Import Utility. If you choose *Yes*, that is, column format rather than free form, you *cannot* re-import the file.

- Optimize Import?

If you want to re-import the exported database back into ControlView, choose *Yes* from the popup list. The data will be exported in reverse alphabetical order, which will significantly speed up re-importing the database. The default is *No*.

- Field Delimiter?

If you want the fields in the exported database to be separated by a character other than the space character, choose *Yes* from the popup list. You will not be able to re-import the file back into ControlView if you use field delimiters. The default is *No*.

- Delimiter Character?

Type in the character you want to separate the fields in the exported database.

4. Choose *Accept* and follow the instructions on the screen. Windows appear allowing you to cancel the export. It may take several minutes to export the file.

Change Path

You can change the default directory and path names for new databases, import and export files and import file specifications.

1. Choose *Edit Database* under Configure in the Setup menu. Choose *new* from the popup list, (or type the DATABASE command into the command line), to open the Database Setup window.
2. To change the destination directory or the source directory, choose *Path* from the menu on the top of the Database Setup window. The Configure Database Directory window appears.

Figure 2.37
Configure Database Directory Window

Configure Database Directory

Enter new Database directory:
C:\ACCESS\DB

Enter new Import Data file directory:
C:\ACCESS\UTIL

Enter new Import Specification file directory:
C:\ACCESS\UTIL

Enter new Export Destination file directory:
C:\ACCESS\UTIL

Accept <+> Cancel <Esc>

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The Database Directory defines the default directory and path names of the file to be imported, the location of the imported file, and the location of the import specification file.

3. Fill in the fields:

- Enter new Database directory

The directory where ControlView stores its database, and the directory where your imported database will go. By default, this directory is \ACCESS\DB; to change it, type in a new path here.

Important: Whenever you configure a pathname, be sure to start with the drive letter. This is absolutely essential when running ControlView in a multi-drive environment.

- Enter new Import Data file directory

The directory containing the tag and alarm files to be imported. To change the directory, type in the new path here. The path name in this field will appear in the *Import Data file name* and *Alarm Import Data file name* fields of the Database Import Utility window.

- Enter new Import Specification file directory

The directory containing the description of the database structure for the new file. Both DBS200.SPC (the database specification file) and ALM200.SPC (the alarm information specification file) are stored in this directory by default; to change the directory, type in the path here.

- Enter new Export Destination file directory

The directory where exported files are stored by default. The path name in this field will appear in the *Destination file name* field of the Database Export Utility window.

4. When you are satisfied with the directory listings, choose *Accept to save them*. This will close the window and return you to Database Setup.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database

Edit Derived Tags

Edit Events

Configure Activity Log

Edit Data Logger

Configure Alarm Severity

Edit Report Template

Edit Derived Tags

Choose *Edit Derived Tags* to define values for local tags in the database. A derived tag is a tag whose value is calculated (or derived) from other tags. With the Derived Tags application module, calculations can be performed on tag values.

For further information, refer to the *Derived Tags User Manual*,

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database

Edit Derived Tags

Edit Events

Configure Activity Log

Edit Data Logger

Configure Alarm Severity

Edit Report Template

Edit Events

Choose *Configure Event Detector* to set up the Event Detector software. With the Event Detector, specific conditions can be monitored, and commands or macros can be automatically run whenever they occur.

For further information, refer to the *Event Detector User Manual*.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Configure Activity Log

When the Activity Logger is running (by default it is on), it continually records system activity. The data recorded can be useful for tracking operator activity, diagnosing system load, tracing errors, and for use with C-Toolkit programs.

Activity Logger can record:

- the use of commands and macros
- operator comments
- system errors
- errors from the communication network
- tag read and write activity
- the activity of C-Toolkit applications

Specify which information to log and where to log it, to disk or printer. For example, you can have all system and communication errors printed, and all other activity recorded on disk in an ASCII file.

The Activity Log File Set

Activity Logger saves to a set of ASCII files. When one file fills up, the next file opens. Files continue to open, fill up, and close until all the files in the file set have been filled. At that point the first file opens again and the information stored there is overwritten. The advantage of this method of filing is that the number of files is constant and the size of each file is constant, so the disk never runs out of space. In the Activity Logging Configuration window, you specify how many files there will be in the set, and how large each file should be.

An important aspect of the Activity Logging configuration is what happens when the last file is opened. If you choose, ControlView can warn the operator that the first file will soon be overwritten, so that files can be archived.

To archive the Activity Log file set, in the Actions menu, under Tools, choose *Archive Files*. In the data entry field enter:

@activity <destination>
where <destination> is the path to the destination.

Set Up Activity Logging

1. Choose *Configure Activity Log* from the Setup menu. The following window appears:

Figure 2.38
Activity Logging Configuration Window

Activity Logging Configuration

Directory of file set:

File set name: Printer name: Record length:

Number of files: Records per file: Notify when full:

Activity type	Label	Log to Disk	Log to Printer
Errors	ERROR	Yes	No
Commands	CMD	Yes	No
Applications	APPLC	No	No
Remarks	REM	No	No
Communications	COMM	Yes	No
Tag Write	WRITE	No	No
Tag Read	READ	No	No
Custom 1	CUST1	No	No
Custom 2	CUST2	No	No
Custom 3	CUST3	No	No
Custom 4	CUST4	No	No

Accept <+> Cancel <Esc>

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2. Fill in the appropriate fields:

- Directory of file set

Specify the path name for the log file set. The directory must already exist.

Important: The directory can be on a LAN network drive, if you are using a LAN and want to save your activity log on the file server.

- File set name

Specify the name for the file set. All the log files will have this name with a three digit file extension. The extension identifies the file's position in the set, with file 000 being the first. For example, if you name the file set *ACTIVITY*, and specify that there are three files in the set, the files will be *ACTIVITY.000*, *ACTIVITY.001*, and *ACTIVITY.002* (plus one configuration file simply called *ACTIVITY*).

- Printer name

Enter one of: PRINTER1, PRINTER2, PRINTER3, or PRINTER4.

- Record length

Enter the number of characters that will be stored on a line, either 80 or 132. Messages that are longer than the record length are truncated in the log.

- Number of files

Specify the number of files that the file set will contain.

The more files in the file set, the more historical data you can record on the disk. However, more files consume more disk space.

Important: You can create up to 999 files, but since each file consumes disk space (80 bytes per record for 80 columns, 132 bytes per record for 132 columns), a value close to 5 files is recommended.



ATTENTION: If you change the Number of files, the Record Length, or the Records per file settings for an existing log set, the original files will be destroyed when the new set is created.

- Records per file

Specify the number of records to be stored in the file. Each event (such as the operator entering a command, or the system warning of an error) is one record.

Important: While you can create up to 9999 records per file, a value close to 1,000 records per file is recommended (which, at 80 bytes per record, would mean 80K per file, at 132 bytes per record, 132K per file). You cannot set *both* the Number of files and the Records per file to their greatest values, since 30,000 records in total is the maximum allowance.

- Notify when full

Normally the operator should be alerted to the fact that the last file in the file set has been opened: it means that the file set should be archived before the first file is overwritten. Enter *Yes* if you want the operator notified; otherwise, enter *No*.

3. Fill in the columns in the Activity Logging Configuration window. They have the following meanings:

- Activity Type

These are general categories identifying the kind of activity that can be recorded. This column cannot be edited. The categories are:

- Errors
Log the appearance of an error message.
- Commands
Log the execution of a command.
- Applications
Some applications log as they run. You can log such activities as security logons, network file copying, etc.
- Remarks
Log operator's remarks entered using the REMARK command.
- Communications
Log communication errors.
- Tag Write
Log any tag write (*not* write errors). The SET, TOGGLE and RAMP commands, and entering data into Mouse GRAFIX data entry fields, initiate tag writes.
- Tag Read
Log any tag read (*not* read errors). The STATUS command, and reading data from Mouse GRAFIX data entry fields, initiate tag reads. Normal scanning is *not* logged as tag reads.
- Custom1 through Custom4
These are "empty slots" which can be used for C-Toolkit-generated activity messages.

- Label

When any activity is recorded, the label is included in the log file. If you want to use your own names to identify activity types, type in the label here. If you have created a custom activity with the C-Toolkit, choose a name to represent the type of activity.

- Log to Disk

Enter either *Yes* or *No* to specify whether you want to log to disk. This enables ControlView to write to the Activity Log.

- Log to Printer

Enter either *Yes* or *No* to specify whether you want the activity logged to the printer. If you choose to log only to a printer, you need not specify any of the file set attributes.

4. Choose *Accept* to save your changes.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Edit Data Logger

Choose *Edit Data Logger* to create or modify a Data Logger model. The Data Logger software saves the values of specific sets of tags into log files. Data Logging differs from Activity Logging in that Activity Logging records operator actions and system activity, whereas Data Logging records tag values.

For more information, refer to the *Data Logger User Manual*.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
Configure Novell Printers
Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Configure Alarm Severity

Alarm Severity is one part of a complete alarm configuration. Alarms are part of the database, and are defined in the Database editor. Part of the alarm configuration is how to handle alarms at different severities, as they are detected.

Alarming is an optional application module. For more information refer to the *Alarming User Manual*.

Configure Data Channel
Configure Devices
Configure KT
Configure Mouse
Configure Touch Screen
Configure Printers
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Configure TCP/IP Printers
Configure Phone List
Configure ControlView Nodes
Configure Nodes
Configure Scan Classes

Edit Database
Edit Derived Tags
Edit Events
Configure Activity Log
Edit Data Logger
Configure Alarm Severity
Edit Report Template

Screens Menu

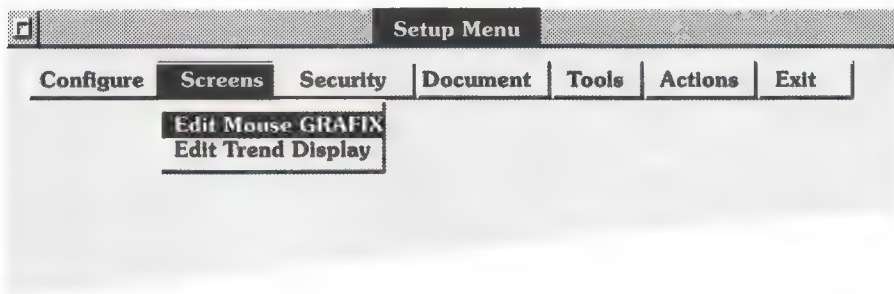
Edit Mouse GRAFIX
Edit Trend Display

Edit Mouse GRAFIX
Edit Trend Display

Edit Report Template

Choose *Edit Report Template* to create or modify a report template. Report templates are created with the Report Editor, and define what data is to be extracted for inclusion in a report, where it is to come from and what format it is to be displayed in.

Reporting is an optional application module. For more information refer to the *Reporting User Manual*.



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Edit Mouse GRAFIX

Choose *Edit Mouse GRAFIX* to create or modify a Mouse GRAFIX display. Mouse GRAFIX displays are full-color graphic windows that can be linked to dynamic tag values.

Mouse GRAFIX windows can be displayed and run without the optional Mouse GRAFIX editor. For complete instructions on running a Mouse GRAFIX display, refer to Chapter 5, *Running Mouse GRAFIX Displays*.

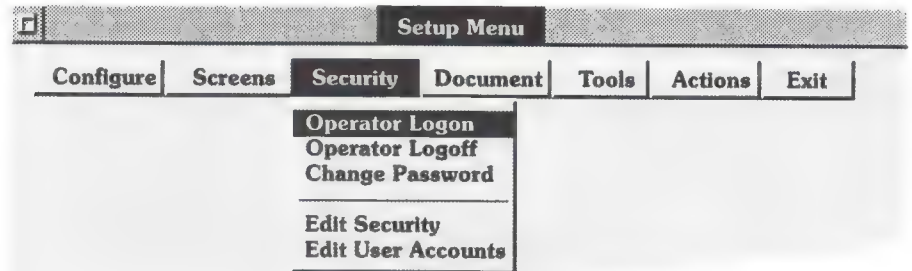
The Mouse GRAFIX editor option is required to edit or create Mouse GRAFIX displays. Refer to the *Mouse GRAFIX Editor User Manual*.

Edit Trend Display

Choose *Edit Trend Display* to create or modify a trend plot specification. Trend plots are line graphs that reflect tag values. They can be used to compare and analyze plant activity in many ways.

Trending is a ControlView option. For further information, refer to the *Trending User Manual*.

Security Menu



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The Security menu allows users to log onto the system, log off, and change passwords. It allows you to develop and test a security system by assigning security codes to commands and macros, and by setting up a user account and password system.

You can also assign security to individual tags, Mouse GRAFIX displays, and to reports, but those operations are not part of the Security menu. You must edit the individual tag in the Database editor. You assign security to Mouse GRAFIX displays using the optional Mouse GRAFIX Editor, and to reports using the Reporting option.

About Security

A security system prevents certain users, or certain classes of users, from accessing parts of the system. Commands, macros, tags, and Mouse GRAFIX windows can be assigned access codes. C-Toolkit programs can check a user's security privileges and determine whether to perform certain functions. Combinations of access codes are then assigned to users, to allow each user access to a different set of features. Security is based on a system of 16 access codes. The codes—A through P—are not access *levels*, they are different access settings which you define. None is automatically "superior" to any other.

Every command, macro, display, tag or report can be assigned an access code. Each user, when assigned a password, is given a set of access codes defining the commands, macros, displays, tags or reports they can use.

Examples: Assigning Access Codes

The following Access Codes are assigned:

- the LOAD command is assigned access code B
- a Mouse GRAFIX display named BOILER is assigned access code D
- a tag named tic_44 is assigned access code E

In the User Accounts configuration:

- Gordon is assigned access codes B D,
- Janet is assigned access codes B D E.

With this setup, Gordon can load databases and call up the BOILER window, but can't change the value of the tag named tic_44. Janet has access to all three; the command, the display and the tag.

By default, commands and macros have no security—anyone can access them.

To add an access code to a command or macro, choose *Edit Security*, and add the command or macro to the Secure Object Table.

Tags have a default access code of *. To change a tag's access code, you must edit the tag using the Database Editor. For each analog, digital or string tag, there is a field in the configure window where the access code is defined.

Default User Access

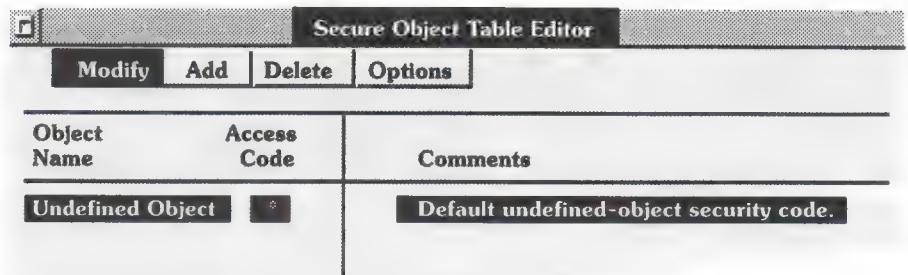
The DEFAULT user settings are in effect when no user has signed on. If the settings for the default user have not been changed, the default user is allowed access to all sixteen codes.

Important: If you don't change the settings for the default user, all users can access all features without logging on. This is also true if all security codes remain with the value: *

To implement security, you must:

1. Change access codes for the default user.

Figure 2.41
Secure Object Table Editor Window



The window titled "Secure Object Table Editor" contains a menu bar with "Modify", "Add", "Delete", and "Options". Below the menu bar is a table with three columns: "Object Name", "Access Code", and "Comments". The table has one row with the following data:

Object Name	Access Code	Comments
Undefined Object	*	Default undefined-object security code.

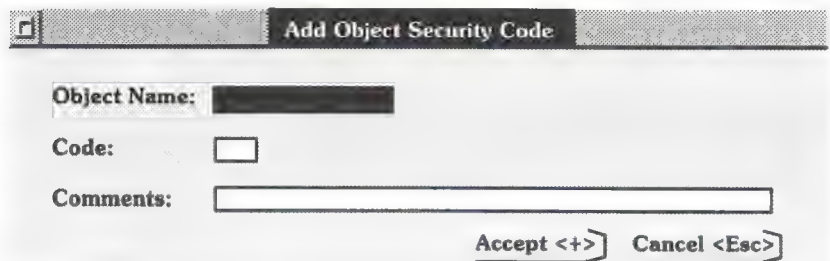
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The first entry in the table is "Undefined Object". You can't edit this entry; it is there to remind you of the default setting for all commands and macros.

Adding Security to a Command or Macro

1. Choose *Add* from the menu. The Add Object Security Code window opens.

Figure 2.42
Add Object Security Code Window



The window titled "Add Object Security Code" contains three input fields: "Object Name:" with a text box, "Code:" with a small text box, and "Comments:" with a larger text box. At the bottom right, there are two buttons: "Accept <+>" and "Cancel <Esc>".

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2. Fill in the fields:

- Object Name

Enter the name of the command or macro. If you have created any symbols (see Chapter 6, *Customizing the System*), use the full command name, not the symbol.

- Code

Enter the access code, A to P, or * for no restrictions.

- Comments

You can, add a remark (forty characters max.).

3. Choose *Accept*.

Changing the Security of a Command or Macro

1. Highlight the command or macro in the Secure Object Table Editor. (They are listed alphabetically.)
2. Select *Modify* from the menu.
3. Move the cursor to the field you want to modify, and type in the changes.
4. Choose *Accept* to save your changes.

Remember that you cannot modify the Undefined Object settings.

Removing Security from a Command or Macro

To remove security from a command or macro:

1. Highlight the command or macro in the Secure Object Table Editor.
2. Choose *Delete* from the menu.
3. Choose *Accept* to remove the command or macro from the Secure Object Table, or *Esc* to leave it as it was.

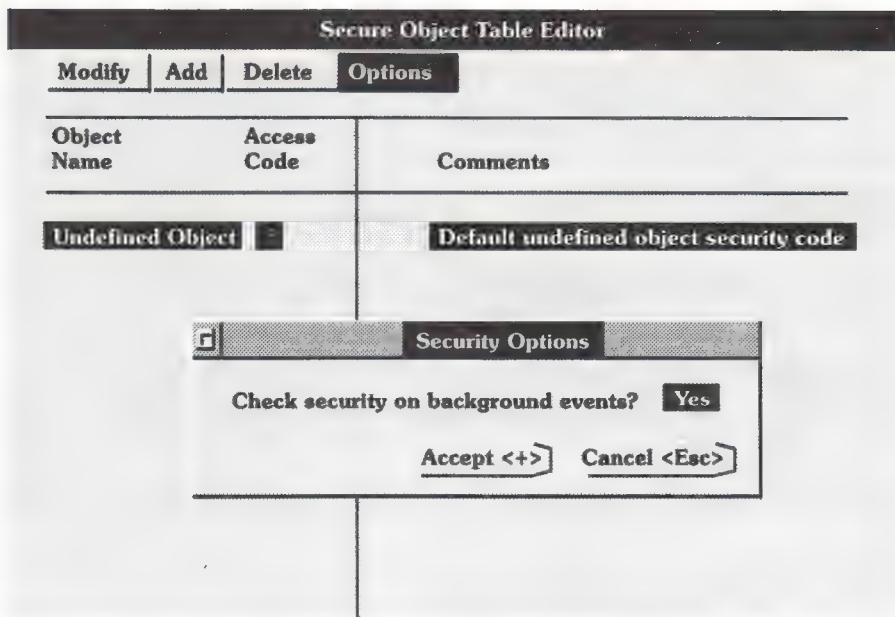
Enhanced Security

Background commands are executed from somewhere other than the command line or the menus. They include commands issued by C-Toolkit tasks, the Event Detector, or those embedded in macros, Mouse GRAFIX displays or key definitions .

You can choose to have all background commands checked to verify that the operator has the appropriate security access. To do so:

1. Choose *Options* from the menu and the Security Options window will open.

Figure 2.43
Secure Object Table Editor Window



42566

2. Specify *Yes* to the question “Check security on background events?” in the Security Options window.
3. Choose *Accept*.

Important Considerations if You Choose “No”

There are several things to note when setting up a security system:

- Whenever an operator runs a macro, the system checks that the operator has access to that specific macro, but does not check security for the commands within the macro. (A macro is a set of commands that can be run by typing in a single macro name; they are fully described in Chapter 6, *Customizing the System*). This allows an operator to run commands, in a controlled manner, that he would not normally have access to.

Similarly, if the macro writes to a tag, operators with security access to that macro can run the macro, (and thereby change the tag’s value), even if they don’t normally have security access to that particular tag. By embedding commands or tag writes in a macro, you can control the context in which an operator can perform certain functions.

- For Mouse GRAFIX displays: if an operator has access to a display, they can use any of the Data Entry fields to perform tag writes, or use any of the Display Keys and Key Command List to issue commands, even if the operator's security settings would prevent direct access.
- When a key is programmed to issue a command or macro, (with a global Key Definition, a Mouse GRAFIX display-based key assignment, or C-Toolkit program), the command will be sent regardless of the operator's security classification.
- If an operator has access to a menu, security is checked only on the command or macro that the menu item runs - *not* on the parameters. For instance, if a menu item ran the command SET TAG 20, the SET command would be security-checked, but access to the tag would not be checked.

Assigning Security to a Tag

Tags also have a default access code of *. To restrict tag write access to the tag, you must change the code.

Use the Database Editor to change the access code for a tag. The security access code for any tag is in first data entry field of the configure window, in the upper right-hand corner.

Adding Security to a Mouse GRAFIX Display

Use the Mouse GRAFIX editor to add, modify or delete security for a display. Refer to the *Mouse GRAFIX Editor User Manual* for more information.

Edit User Accounts

User accounts are stored in the User Account Table. This table holds each user's name, access code privileges, logon macro, logout macro, and password. Up to 100 security accounts can be configured.

To create a user account:

1. Choose *Edit User Accounts* from the Security menu. The User Accounts Browser opens.

Operator Logon
Operator Logoff
Change Password

Edit Security
Edit User Accounts

Figure 2.44
Security-User Account Browser Window

Name	Security Access Privileges A B C D E F G H I J K L M N O P	Logon Macro	Logout Macro
DEFAULT	Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y Y		
	N N N N N N N N N N N N N N N N		

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Important: When modifying the DEFAULT user, you can modify the access codes only. You can't change the account name, or add a logon macro or password.

2. Choose *Add*. The account window opens.

Figure 2.45
Security-Add User Account Window

Name A B C D E F G H I J K L M N O P Logon Macro Logout Macro Password

XXXXXXXXXX

Accept <+> Cancel <Esc>

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Fill in the appropriate fields:

- Name

Enter a user name or ID for the account (eight characters max., can include letters, numbers, and underscore). The name is converted to upper case.

- Access Codes

Enter a Y to give the user access to a code, or an N to deny access.

- Logon Macro

Using a logon macro is optional. To use a Logon macro, name a macro in this field. The macro will run each time this user logs on. For more information on the Logon macro see Chapter 6, *Customizing the System*.

- Logout Macro

Using a logout macro is optional. To use a Logout macro, name a macro in this field. The macro will run each time this user logs off. This is useful for returning the system to a “standard” configuration, to ensure that security sensitive windows close when the user logs off. It is a good idea to include the CHAINCLR and ABORT * commands to prevent unwanted errors if the new user selects Esc and brings up a graphic that they do not have access to.

The Logout macro can reverse whatever commands were implemented in the Logon macro, and leave the system secure.

- Password

Type in a password for this user (eight characters max., can include letters, numbers, and underscore characters). The password is not case sensitive, i.e., the system doesn’t distinguish between lower and upper case letters. A blank or null password is acceptable.

Modifying a User Account

To modify an account:

1. Highlight the account in the User Account Browser, then choose *Modify*.

Figure 2.46
Security-Modify User Account Window

Name	Logon Macro	Logout Macro	Password
A B C D E F G H I J K L M N O P			

Accept <+> Cancel <Esc>

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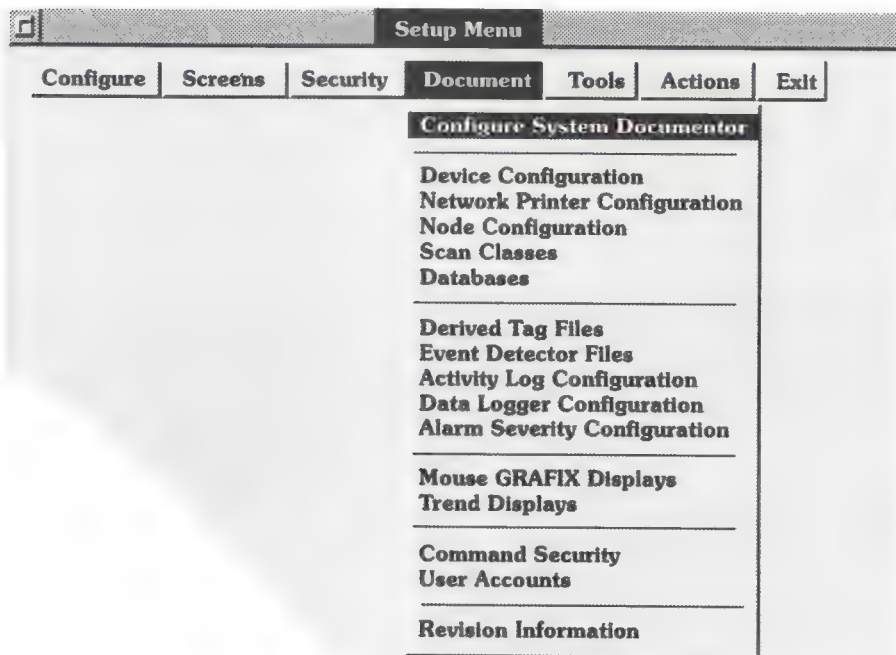
2. Move the cursor to the field you want to modify. Type in your changes.
3. Choose *Accept* to save your changes (or *Esc* to abandon the changes).

Deleting a User Account

To delete an account:

1. Highlight the account name in the User Account Browser, and choose *Delete*.
2. Choose *Accept* to delete the account, or *Cancel* if you choose not to delete it.

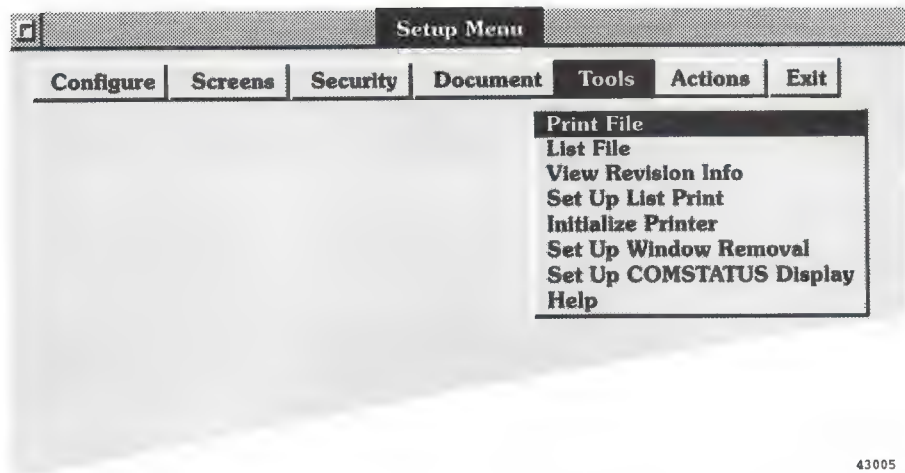
Document Menu



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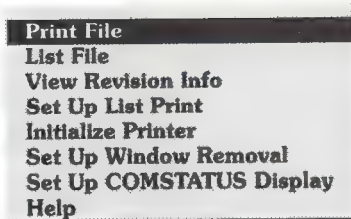
The Document menu enables you to generate reports about your system's configuration. Chapter 7, *The System Documentor* provides detailed information about using the Document menu.

Tools Menu



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The Tools menu contains utilities that can be helpful when developing an application, and when updating software.



Print File

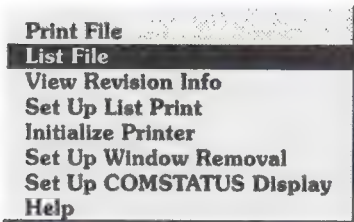
1. Choose *Print File* to print ASCII text files or a file set. A window will pop up with the following prompt:

Print which file?
2. Type in either:
 - the complete path name of a text file
 - the name of a system log file set, preceded by the @ character. To print the Activity Logger file set, type @ACTIVITY; to print the Alarming file set, type @ALARM

Important: There can be more than one alarm log file set, but the special name @ALARM only refers to the alarm log file set which is named in the Alarm Logging Configuration window. The same is true of the Activity Log file set and the name @ACTIVITY.

Using *Print File* is the same as printing an entire file using *List File*. The output will be printed on the printer selected in *Configure List Utility*.

Important: You can also print a color or black and white image of the current window, using the SCREENPRINT command. This command is only useful when one of your application's windows is on the screen, so it doesn't appear in any menu. You must have the appropriate graphics printer installed and defined in the Device Configuration window and the Printer Configuration Editor window before using the SCREENPRINT command. Refer to Appendix A, *ControlView Commands*, for complete information on the SCREENPRINT command.

A screenshot of a menu titled 'List File'. The menu items are: 'Print File', 'List File' (highlighted), 'View Revision Info', 'Set Up List Print', 'Initialize Printer', 'Set Up Window Removal', 'Set Up COMSTATUS Display', and 'Help'.

Print File
List File
View Revision Info
Set Up List Print
Initialize Printer
Set Up Window Removal
Set Up COMSTATUS Display
Help

List File

List File allows you to display and print the contents of ASCII text files on the computer screen. The display options such as text size and colors are set in Configure List Utility, which is described later in this chapter.

1. Choose *List File* and a window pops with the following prompt:

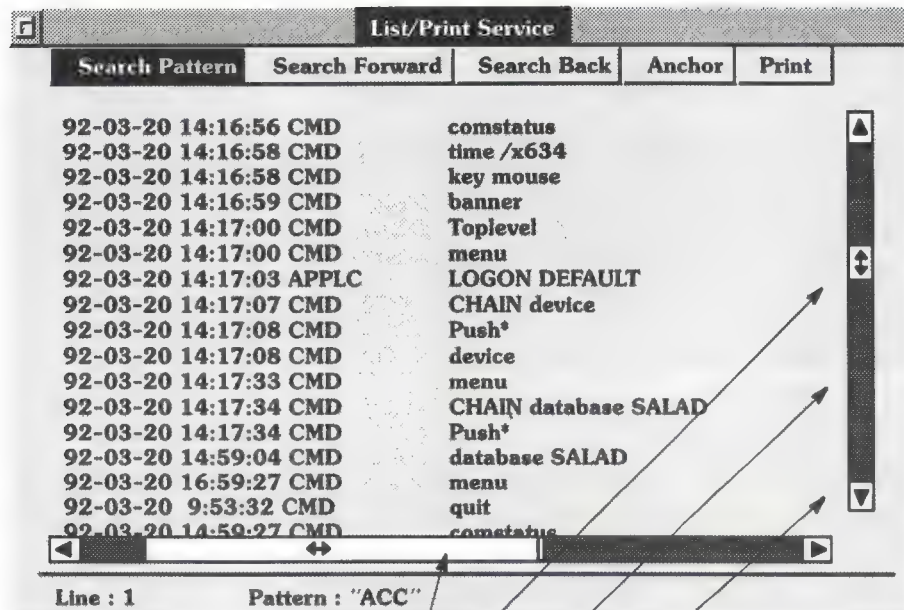
List which file?

2. Type in either:
 - the complete path name of a text file
 - the name of a system log file set, preceded by the @ character. To list the Activity Logger file set, type @ACTIVITY; to list the Alarming file set, type @ALARM

If there are several log file sets of the same type, the one named in the configuration window (such as the Activity Log configuration, or Alarm Severity configuration) will be displayed.

The file appears in the List/Print Service window.

Figure 2.47
List/Print Service Window



Drag the slider to scroll the display.

The slider size shows how far you can scroll.

Click in the gray area to move one screen at a time.

Click on the end buttons to scroll a small amount.

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3. Select the text to print or display by moving the cursor through the text, or, if the file is large, using a Search Pattern to find a specific word or text string. See Appendix B, *Keys*, for the keys used in *List*.
4. Select *Search Pattern*, and type in the characters you want to find.

About Search Patterns

You can search for a specific string of text (such as a time or date) within a file. First specify the search pattern you want to find, then search forward or backward in the file.

Important: The search patterns are case sensitive - you must match the upper/lower case characters exactly.

You can use the following wild card characters within the search string:

Table 2.H
Wild Cards Used In Searching Listed Files

Character	Meaning
?	matches any single character. Does <i>not</i> match a null character.
*	matches any group of characters. The asterisks must be between two other characters. It is ignored if it at the beginning or end of the search string.
\	placed before an asterisk or question mark, allows you to search for the * or ? character.

Important: The search string must be in quotes "".

For example, to search for the string, "Mississippi?":

Table 2.I
Search Patterns

This search pattern:	Finds the highlighted section:
"is"	Mississippi?
"i?s"	Mississippi?
"i?ss"	no match
"M*p"	Mississippi?
"?p"	Mississlppi?
"*Miss"	Mississippi?
"^?"	Mississippi?
"?i?s?p?i"	Mississlppi?

The options in the List/Print Service screen are as follows:

- Search Forward

Choose *Search Forward* to search from the highlight bar's current position towards the end of the file or file set.

- Search Back

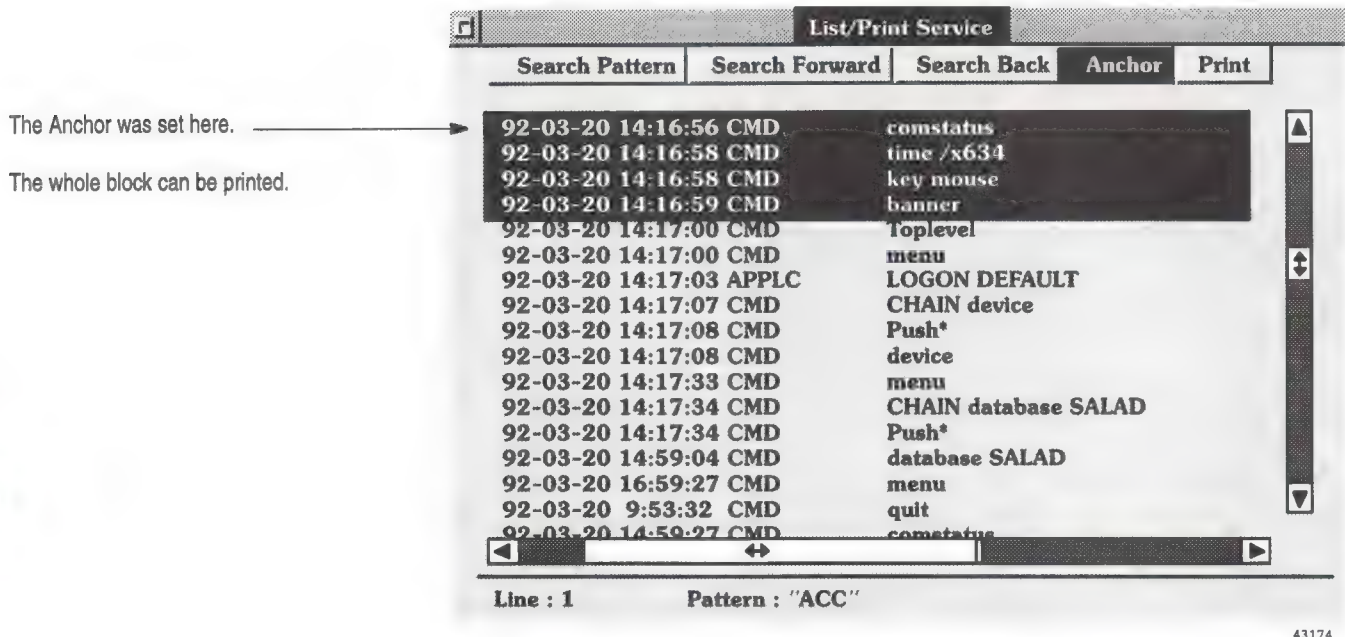
Choose *Search Back* to search from the highlight bar's current position towards the beginning of the file or file set.

- Anchor

Choose *Anchor* to highlight a segment of the file and then print that block instead of the whole file.

Move the highlight bar to the beginning of the block and choose *Anchor*. The highlight bar is now anchored in place. Use the cursor keys to stretch the size of the block, or use *Search Forward* and *Search Back* to define the other end of the block.

Figure 2.48
List/Print Service Window

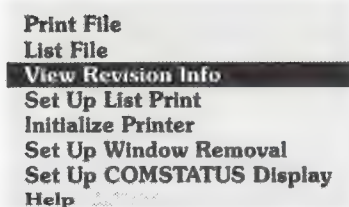


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Choose *Anchor* a second time to release the anchor and restore the highlight bar to its one-line size.

Print

Choose *Print* to print the block (if an anchor was set), or the entire file or file set.



View Revision Info

Choose *View Revision Info*, and a window appears listing the revision numbers for the installed version of ControlView and for each option you have installed, and the registration number for this installation of ControlView.

Figure 2.49
System Revision Information Window

System Revision Information		
Serial # XXXXXXXX		
ControlView Core System	3.00	October 15, 1992
Allen-Bradley Drivers	3.00	October 15, 1992
Alarming	3.00	October 15, 1992
C-ToolKit	3.00	October 15, 1992
Derived Tags	3.00	October 15, 1992
DataLogger	3.00	October 15, 1992
Event Detection	3.00	October 15, 1992
Mouse GRAFIX Editor	3.00	October 15, 1992
Reporting	3.00	October 15, 1992
Getting Started	3.00	October 15, 1992
Trending	3.00	October 15, 1992

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Print File
List File
View Revision Info
Set Up List Print
Initialize Printer
Set Up Window Removal
Set Up COMSTATUS Display
Help

Set Up List Print

Choose *Set Up List Print* to specify how the window will appear when you list a file with *List*. The following window will appear:

Figure 2.50
List/Print Setup Window

List/Print Setup	
Tab Stops: <input type="text" value="4"/>	Text Size: <input type="text" value="Normal"/>
Text Foreground: <input type="text" value="Black"/>	Text Background: <input type="text" value="White"/>
Hilite Foreground: <input type="text" value="Gray"/>	Hilite Background: <input type="text" value="Blue"/>
Anchor Foreground: <input type="text" value="Red"/>	Anchor Background: <input type="text" value="Black"/>
Horizontal Scroll Increment: <input type="text" value="8"/>	Printer: <input type="text" value="Printer1"/>
<input type="button" value="Accept <+>"/> <input type="button" value="Cancel <Esc>"/>	

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Important: Printing with List/Print is text printing, not a color screen dump. Both black-and-white and color printers are supported in text printing mode.

You can change any of the following settings if you wish. Choose *Accept* to save the changes.

- Tab Stops

Define the size of each tab stop, if the files you want to display use tab characters.

- Text Size

Choose normal or small print for the displayed text.

- Text Foreground and Background

Specify the basic colors of the window - text (foreground) and the background behind the text.

- Hilite Foreground and Background

Specify the colors displayed in the highlighted scrolling bar - highlighted text (foreground) and the color of the highlighted bar itself (background).

- Anchor Foreground and Background

Specify the colors displayed in the anchor bar (when the *Anchor* option is being used) - anchor text (foreground) and the color of the anchor bar itself (background).

- Horizontal Scroll Increment

Specify how far the window will shift sideways each time it scrolls. If the lines in the file are longer than the window width, you will have to shift the window sideways (scroll it horizontally) to read them.

- Printer

Identify which printer (as defined in the Device Configuration) you want to print files on. This setting is for both *List File* and *Print File*.

Print File
List File
View Revision Info
Set Up List Print
Initialize Printer
Set Up Window Removal
Set Up COMSTATUS Display
Help

Initialize Printer

Normally you would include a command to initialize your printer in the Startup macro so that, when ControlView starts up, it initializes the printer or printers that you specify.

If you have not done this, or if you have switched on the printer after starting up ControlView, choose *Initialize Printer*. Then specify which printer you wish to initialize (PRINTER1 through PRINTER4, as defined in Device Configuration). The escape sequence defined as the initialization code in the printer configuration will be sent.

For more information on the Startup macro and macros in general, refer to Chapter 6, *Customizing the System*.

Print File
List File
View Revision Info
Set Up List Print
Initialize Printer
Set Up Window Removal
Set Up COMSTATUS Display
Help

Set Up Window Removal

You can set up ControlView to automatically close windows when new windows are opened, to avoid running out of video memory. There are two different setups:

- the oldest window is removed as the new window is created
- you can specify the sequence in which windows are removed; for example you can ensure that Mouse GRAFIX windows are not removed until all the Tag Status windows have been removed

If you do not set up a window removal sequence, you'll be prompted to remove a window whenever you run out of video memory.

To set up the sequence in which windows are removed:

1. Choose *Set Up Window Removal*. The Window Removal Configuration window opens.

Figure 2.51
Window Removal Configuration Window

Window Removal Configuration

Always auto remove oldest window:

Otherwise, select the order for auto-removal of runtime windows only. If no windows can be removed automatically, a window selection list will be displayed.

Remove first:

Trend Displays
Tag Status Windows
Alarm Summary Windows
Mouse GRAFIX Displays
C-Toolkit Programs

Remove last:

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2. To specify that the oldest window is always removed, enter *Yes* in *Always auto remove oldest window*. ControlView then ignores the remaining fields on the window.
3. To specify a sequence in which window types are removed:
 - a. Enter *No* in *Always auto remove oldest window*.

- b. Use the lower 5 fields to list the sequence in which the 5 windows types are to be removed. Start with the window type that is to be removed first. Do not repeat a window type in the list, but you can leave blanks.

4. Choose *Accept* to return to the Setup menu.

Print File
List File
View Revision Info
Set Up List Print
Initialize Printer
Set Up Window Removal
Set Up COMSTATUS Display
Help

Set Up COMSTATUS Display

The COMSTATUS (Communication Status) display shows the status of communication activity. In the default settings, it is displayed continuously at the bottom left corner of your screen (provided that one or more data channels have been set up).

You can define the colors, print size and position of the Communication Status display. You can also specify whether it displays the *station* (the current station number) or *messages* (how many buffered messages).

1. To call up the COMSTATUS Display Configuration window, choose *Set Up COMSTATUS Display*.

Figure 2.52
Comstatus Display Configuration Window

Comstatus Display Configuration

Window Position: x 0 y 342

Display Format: Station

Font Size: Small

Colors	Foreground	Background
Normal	Green	Black
Error	Black	Red
History	Yellow	Black

Defaults Accept <+> Cancel <Esc>

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2. Enter the fields as follows (To revert to the system default settings, choose *Default*. All fields will display the system defaults):

- Window Position

Define the position of the left side of the display on the screen by specifying the

- x coordinate (horizontal) in the range 0 to 639
- y coordinate (vertical) in the range 0 to 349

The default settings are $x=0$ and $y=342$. This places the COMSTATUS display at the bottom, left of the screen.

- Display Format

Choose either:

- *Station* to display the station number of the PLC® that ControlView is currently communicating with.

or

- *Messages* to show the number of messages waiting in the communications buffer. A higher number means an increasing communication load on the network and, therefore, decreasing performance.

- Font Size

Specify *Small*, *Medium*, or *Large* type size for the COMSTATUS display. The default is *Small*.

- Colors

Specify the colors of the display. Different colors can be set to exhibit each of three communication statuses - for the text (foreground) and the accompanying background:

- *Normal* status: means there have been no communication errors. The default colors for the normal status are green on black.
- *Error* status: means a communication error with a node is currently occurring. The default colors for the error status are black on red.

- *History* status: means there has been a communication error, but communication is now functioning correctly. The default colors for the history status are yellow on black.

3. When you've finished, save your changes with the *Accept* button.

If you change the COMSTATUS configuration while the COMSTATUS display is visible, the changes will be shown as soon as you choose *Accept*. The next time you start the COMSTATUS display, the new settings will be used automatically.

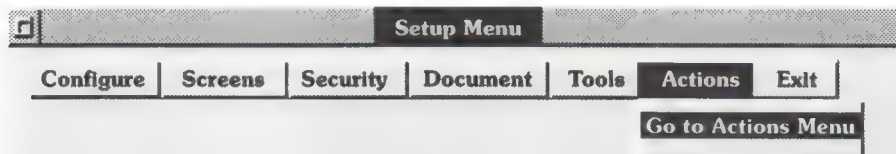
Print File
List File
View Revision Info
Set Up List Print
Initialize Printer
Set Up Window Removal
Set Up COMSTATUS Display
Help

Help

Choose *Help* to bring up ControlView's on-line Help system. The main Help menu lists topics on which Help is provided, from keyboard use to the commands in the various ControlView subsystems. Press the arrow keys or the **Tab** key to move from one menu item to the next. To get help on a topic, press **Enter** on the selection.

Note that the Help system is modifiable for custom use. For further details see Chapter 6, *Customizing the System*.

Actions Menu



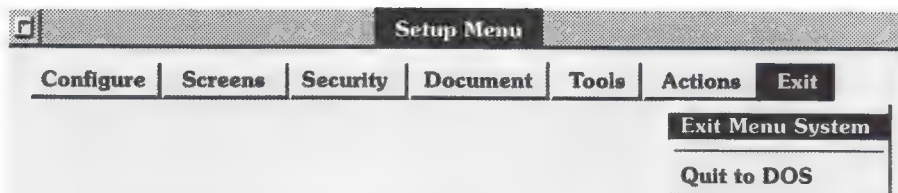
42006

Go to Actions Menu

Go to Actions Menu

To leave the Setup menu to load a database, or to start one of the software subsystems such as Alarming or the Activity Log, choose *Go to Actions Menu*. The Actions menu is described in Chapter 3, *The Actions Menu*.

Exit Menu



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Exit Menu System

Quit to DOS

Exit Menu System

The menu system, which comprises the Setup menu and the Actions menu, is intended to make it easier to develop and test a ControlView plant monitoring system.

ControlView can be run without the menu system: every menu item is also available as a command, and some features are only available as commands.

To run ControlView without the menus, choose *Exit Menu System* from the Exit menu. The blue command line will appear at the bottom of the screen; otherwise the screen will be blank.

For more information on using the command line to run ControlView, refer to Chapter 4, *Running from the Command Line*. Also refer to Appendix A, *ControlView Commands*, for a complete list of commands.

To display the command line, press **Alt-C**.

To return to the Menu System, use the **MENU** command.

Exit Menu System

Quit to DOS

Quit to DOS

Choose *Quit to DOS* to leave ControlView and return to the DOS operating system. From DOS, you can run DOS commands such as disk- or file-copying commands, or you can start another application.

When you quit ControlView, all currently running foreground and background operations are aborted. Only the Application Window, if installed, continues to run. You must abort the Application Window before you can return to DOS.

The Setup Menu and Its Related Commands

Every item in the Setup menu has a ControlView command associated with it; in fact, choosing the menu item simply runs the command as if it was typed into the command line. Table 2.J lists the commands that are run when each menu item is chosen. These commands can also be run from the command line, or used in macros or key definitions.

Table 2.J
Setup Menu and Related Commands

Configure	
Configure Data Channel	DCCONFIG
Configure Devices	DEVICE
Configure KT	KTCONFIG
Configure Mouse	MOUSECONFIG <i>[options]</i>
Configure Touch Screen	TOUCHCONFIG
Configure Printers	PRINTERCONFIG
Configure Novell Printers	NOVELL
Configure TCP/IP Printers	LPRCONFIG
Configure Phone List	MODEMDIRECTORY
Configure ControlView Nodes	NETCONFIG
Configure Nodes	NODE
Configure Scan Classes	CLASS
Edit Database	DATABASE <i><database></i>
Edit Derived Tags	DERIVED /N
Edit Event Detector	EVENT /N
Configure Activity Log	ACTIVITY
Edit Data Logger	DATALOG <i><model></i>
Configure Alarm Severity	ALARM
Edit Report Template	REPORT <i>[template]</i>
Screens	
Edit Mouse GRAFIX	GRAFIX <i><display></i>
Edit Trend Display	TREND <i><trend></i>
Security	
Operator Logon	HELLO
Operator Logoff	BYE
Change Password	PASSWORD
Edit Security	SECURITY
Edit User Accounts	ACCOUNT

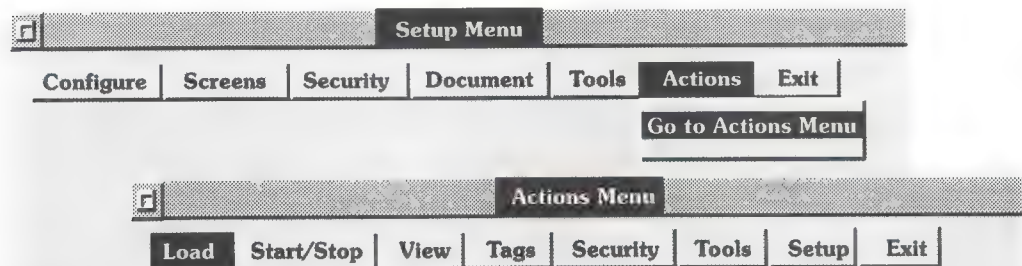
Table 2.K
Setup Menu and Related Commands (continued)

Tools	
Print File	PRINT <file>
List File	LIST <file>
View Revision Info	REVISION
Set Up List Print	LISTCONFIG
Initialize Printer	PRINTINIT <printer>
Set Up Window Removal	WINDOWCONFIG
Set Up COMSTATUS Display	CMSCONFIG [options]
Help	HELP
Exit	
Quit to DOS	QUIT

The Actions Menu

ControlView's two main menus help in the development and testing of a plant application. ControlView starts up with the Setup menu, which contains configuration options. The second menu is the Actions menu.

Figure 3.1
Getting to the Actions Menu



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With the Actions menu, you can manually perform most runtime system activities. You can load and unload databases and Key Definition files, Mouse GRAFIX displays and log files; you can view programmable controller animated displays; you should in fact be able to test all major components of the application that you configured using the Setup Menu.

Table 3.C, at the end of this chapter, shows the Action menu items and their related commands. When you are familiar with ControlView's features and functionality, refer to Chapter 5, *Running From the Command Line*, for information on how to use the command line rather than the menus. See also Appendix A, *ControlView Commands*, for quick reference to all commands.

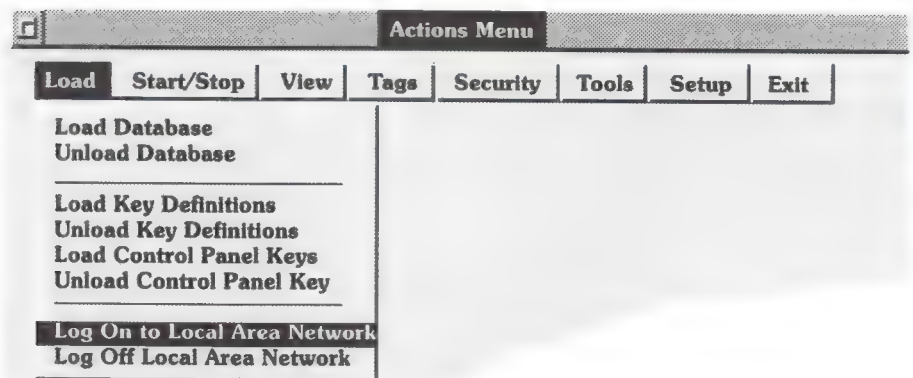
The command line requires more advanced knowledge, but offers greater flexibility than the menu system. Commands are needed to make symbols and macros, which are important for an easy-to-use operator system.

You can switch from the Setup menu to the Actions menu whether or not a database is loaded and running. You have the freedom to test an application as you're developing it, without a strict separation of "on-line" and "off-line" activities.

There are a few limitations:

- If you change the scan class configuration, you must unload and reload the database to reset the scan classes.
- If you change the data channel or device configuration, you must restart ControlView to re-initialize the tables in memory.
- You can't edit a database while it's loaded.
- Editing a Mouse GRAFIX display while the system is actively executing other tasks, slows down performance.

Load Menu



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The Load menu is chiefly dedicated to file operations: loading and unloading databases and Key Definition files. If your system includes the Networking option, ControlView nodes are logged on and off the Local Area Network through this menu.

Generally, the first thing you'll do in the Actions menu is load a database. Most of the Actions menu items require that a database be in memory; for example, alarms can't be started unless a database containing alarmable tags has been loaded.

Load Database
Unload Database

Load Key Definitions
Unload Key Definitions
Load Control Panel Keys
Unload Control Panel Keys

Log On to Local Area Network
Log Off Local Area Network

Load Database

Choose *Load Database*, and a list of available database names pops up. Highlight a name and press **Enter**.

When a database loads, two things happen: the Current Value Database is loaded into memory and the static database for the same tags is opened on disk.

To change databases, load a different database. The CVD and static database are automatically unloaded before a new database loads, as long as no tasks are using the data base.

When a database is already loaded, an asterisk, *, is shown next to its name in the Database Setup window of the Database Editor.

Important: You can view a database while it's loaded, but you can't edit it while it's loaded. Before editing a database, close all windows using the database, stop all tasks using the database, then remove it from memory by choosing *Unload Database*.

Use the Database Editor to create or edit a database. The Database Editor is described in Chapter 2, *The Setup Menu*, in the section on the Edit Database menu item.

Load Database
Unload Database

Load Key Definitions
Unload Key Definitions
Load Control Panel Keys
Unload Control Panel Keys

Log On to Local Area Network
Log Off Local Area Network

Unload Database

Choose *Unload Database* to remove the current database from memory.

Before a database can be unloaded, all applications using the tags in the database must be stopped. This includes background applications such as Data Logger and Alarming.

Load Database
Unload Database

Load Key Definitions
Unload Key Definitions
Load Control Panel Keys
Unload Control Panel Keys

Log On to Local Area Network
Log Off Local Area Network

Load Key Definitions

Choose *Load Key Definitions* to load a Key Definition file. A Key Definition file assigns commands or macros to specified keys or key combinations. In designing an operator interface, it's common to create special purpose keys to run predefined commands or macros.

Several Key Definition files can be loaded one after the other. As long as the same key is not redefined, the key definitions will merge. If there is a duplicate definition for a key, the most recent definition will replace the previous one.

For information about creating a Key Definition file, refer to Chapter 6, *Customizing the System*.

Load Database
Unload Database

Load Key Definitions

Unload Key Definitions

Load Control Panel Keys

Unload Control Panel Keys

Log On to Local Area Network

Log Off Local Area Network

Unload Key Definitions

To remove all current key definitions, choose *Unload Key Definitions*.

Load Database
Unload Database

Load Key Definitions

Unload Key Definitions

Load Control Panel Keys

Unload Control Panel Keys

Log On to Local Area Network

Log Off Local Area Network

Load Control Panel Keys

The ControlView Intelligent Control Panel (6172-CP14) is a rugged keyboard especially designed for plant floor use. ControlView can be operated from one or two Control Panel keyboards at a time—in fact two Control Panel keyboards *and* the standard keyboard can all be used at the same time.

Keys on the Control Panel can be assigned ControlView commands and macros or regular keyboard functions. Choose *Load Control Panel Keys*; you will be prompted to type in the name of a Control Panel definition file. If you load a second Control Panel file for the same panel, the setting will merge with the first. If the same key is defined twice, the most recent definition will be active.

For information about creating Control Panel definition files, refer to Chapter 6, *Customizing the System*.

Unload Control Panel Keys

To remove the current CP14 Control Panel key settings, choose *Unload Control Panel Keys*.

Load Database
Unload Database

Load Key Definitions

Unload Key Definitions

Load Control Panel Keys

Unload Control Panel Keys

Log On to Local Area Network

Log Off Local Area Network

Load Database
Unload Database

Load Key Definitions
Unload Key Definitions
Load Control Panel Keys
Unload Control Panel Keys

Log On to Local Area Network
Log Off Local Area Network

Load Database
Unload Database

Load Key Definitions
Unload Key Definitions
Load Control Panel Keys
Unload Control Panel Keys

Log On to Local Area Network
Log Off Local Area Network

Start/Stop Menu

Log On to Local Area Network

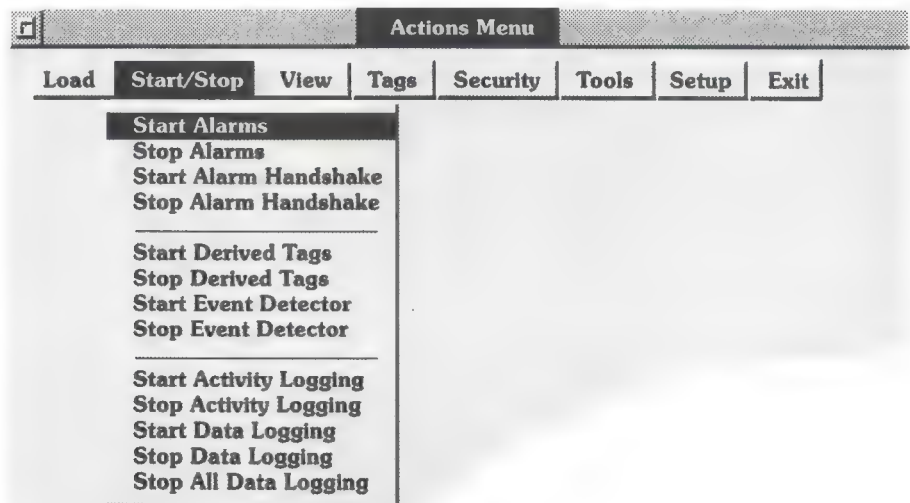
Choose *Log On to Local Area Network* to connect your ControlView station for communication with other ControlView stations on the LAN (peer to peer).

Networking is an optional ControlView application module; for information on running peer to peer ControlView nodes on a LAN, see the *Networking User Manual*.

Important: The Networking option is not required to access Novell file servers on a LAN.

Log Off Local Area Network

Choose *Log Off Local Area Network* to disable peer to peer ControlView communications over the LAN.



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The Start/Stop menu lets you easily start up or stop any of the software subsystems. This allows quick testing as you develop your application. All of these software features, except the Activity Logging option, require that a database be loaded before they can run. If no database is loaded, or if the database in memory is not configured for the specific application you want to start, an error message will be displayed.

All the items in this menu, except those referring to the Activity Log, relate to software options. Not all items may be in your menu: only those options that are installed will show in your menus.

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Alarms

To start monitoring all alarmable points in the current database, choose *Start Alarms*.

Alarm monitoring continues in the background no matter what foreground applications may be running. Alarmable points are continually scanned, at the background rates for their scan classes.

Alarming is an optional ControlView module. For more information, refer to the *Alarming User Manual*.

Stop Alarms

To stop monitoring for alarms, choose *Stop Alarms*.

Stop Alarms also stops Alarm Handshaking if it has been started.

Important: It is possible to selectively prevent certain points from triggering alarms, while other points are still monitored. To do this, choose *Suppress Alarms* in the Tags menu.

Start Alarm Handshake

When an alarm is generated for a tag, a handshake bit can be set (usually in the programmable controller) so that another programmable controller or ControlView station can quickly determine the alarm status for the point. By default, this handshaking system is off. Choosing *Start Alarm Handshake* enables handshaking, so that, if so configured, alarm handshake bits can be set or reset automatically. For more information on alarm handshaking, refer to the *Alarming User Manual*.

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Stop Alarm Handshake

Choose *Stop Alarm Handshake* to disable alarm handshaking. By default, handshaking is off.

Start Derived Tags

To start the Derived Tags processor, choose *Start Derived Tags*. A list of derived tags pops up.

Derived tags are local tags whose value is calculated from other tag values. The Derived Tag processor is useful for summing tag values, comparing tag values against each other or against a baseline value, and other more complex calculations. Derived Tags is an optional ControlView module. For information on setting up and using derived tags, refer to the *Derived Tags User Manual*.

Stop Derived Tags

Choose *Stop Derived Tags* to stop the Derived Tags processor. No list of derived tags is displayed, instead, the one active derived tag file is immediately stopped.

Anything which depends on the local tags whose value is updated by the Derived Tags processor (which could include Mouse GRAFIX windows, and any other displays which require calculated tag values) will continue to operate. However it will use the results of the last calculation performed while the Derived Tags processor was running.

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Event Detector

Choose *Start Event Detector* to start the Event Detector. A list of available events pops up.

The Event Detector monitors the occurrence of specific events. The Event Detector is an optional ControlView module. For information on creating and monitoring events, refer to the *Event Detector User Manual*.

Stop Event Detector

Choose *Stop Event Detector* to stop detecting preset events. No list of events is displayed, instead, the one active event is immediately stopped.

When event detection ceases, anything that requires an Event Detector event to trigger it will not be triggered.

Start Activity Logging

Choose *Start Activity Logging* to start saving data to the Activity Log file set. Note that the Activity Log is started automatically whenever ControlView is started up. The Activity Log can record:

- the use of commands, macros, and symbols
- the startup, running, and shutdown of an application
- comments that the operator wants stored in the Activity Log File
- system errors
- communication errors from the programmable controller network
- tag read and write activity
- the activity of C-Toolkit applications

The Activity Log is described in Chapter 2, *The Setup Menu*, in the section about Configuring the Activity Log.

The contents of the Activity Log can be viewed or printed by choosing *List Activity Log* in the Tools menu.

Stop Activity Logging

Choosing *Stop Activity Logging* stops saving system activity to the Activity Log file set.

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Start Data Logging

Choose *Start Data Logging* to start saving selected database values to the Data Log file set. The function of the Data Logger is to save specific sets of tag values from the database onto disk, at certain times. Which tags are saved, and how often, is defined by the data logger *model*. When you choose *Start Data Logging*, a list of available models will pop up. Choose the model to log, and logging will begin. More than one model can be logged at a time.

Data Logger is an optional ControlView module. For information on how to create data log models, and how to use the logged information, refer to the *Data Logger User Manual*.

Stop Data Logging

Choose *Stop Data Logging* to stop saving a model's tag values to the Data Log. A list of model names will pop up; choose the name of the model you want to stop logging.

Start Alarms
Stop Alarms
Start Alarm Handshake
Stop Alarm Handshake

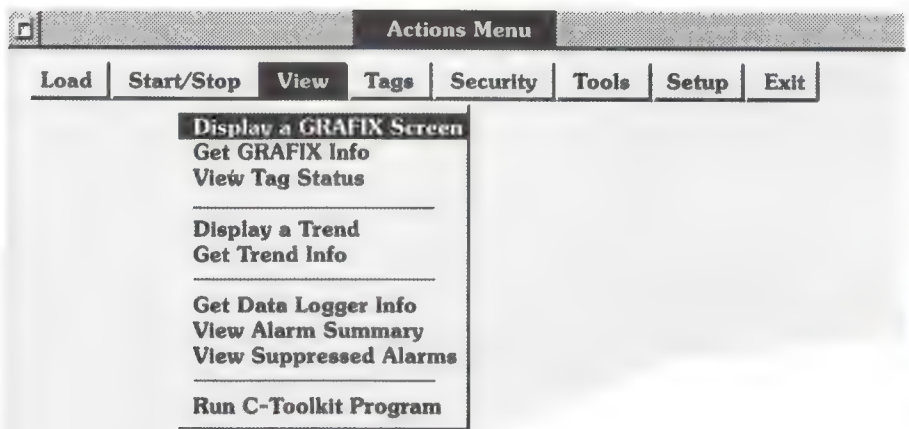
Start Derived Tags
Stop Derived Tags
Start Event Detector
Stop Event Detector

Start Activity Logging
Stop Activity Logging
Start Data Logging
Stop Data Logging
Stop All Data Logging

Stop All Data Logging

Choose *Stop All Data Logging* to stop all models at once.

View Menu



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The View Menu lets you selectively view and test run the different aspects of the operator environment as you develop it.

Display a GRAFIX Screen
Get GRAFIX Info
View Tag Status

Display a Trend
Get Trend Info

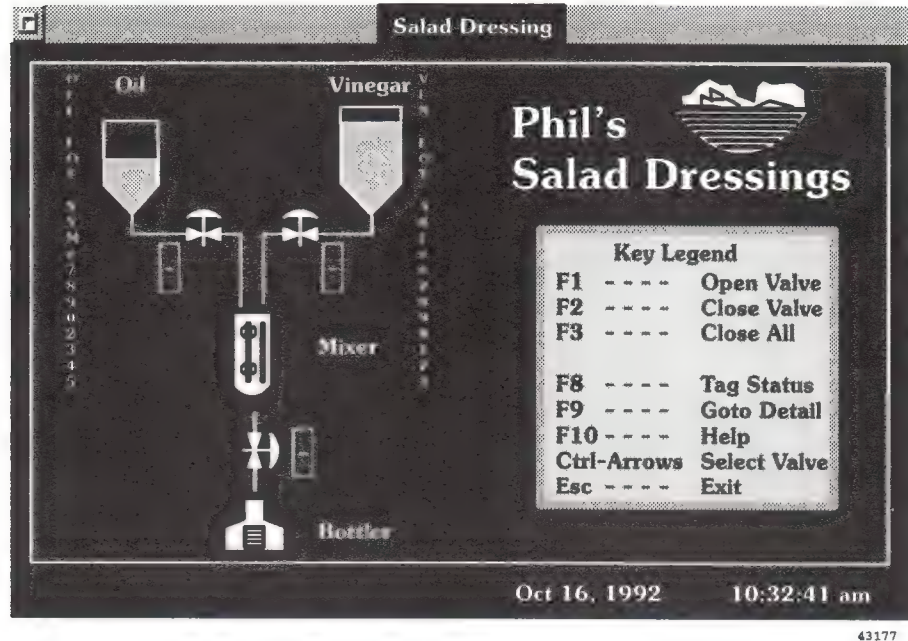
Get Data Logger Info
View Alarm Summary
View Suppressed Alarms

Run C-Toolkit Program

Display a GRAFIX Screen

Choose *Display a GRAFIX Screen* to call up and run a single Mouse GRAFIX display. Mouse GRAFIX displays can represent many kinds of plant activity, as well showing the state of devices in symbolic ways. Based on the varying values in programmable controllers, objects on the window can change color, change fill levels, and animate.

Figure 3.2
Sample Mouse GRAFIX display



For complete information on linking display objects to programmable controller values, and on creating and modifying Mouse GRAFIX displays, refer to the *Mouse GRAFIX Editor User Manual*.

When you choose *Display a GRAFIX Screen*, a list of Mouse GRAFIX files in the current directory will pop up for you to choose from.

Running a Mouse GRAFIX Display

Mouse GRAFIX displays do not necessarily contain objects that are linked to programmable controller values. The display can also contain "shape" objects that do not dynamically change. But if the display *does* contain objects that link to tag values, the database containing the tags must be loaded first.

All tags referenced in a graphic display are automatically put on scan (at the foreground rates specified in the Scan Class table) when the display is called up. This ensures that each tag value represents recent data.

Important: You can display several Mouse GRAFIX windows at a time, and also control the size and location of the window. This *cannot* be done from the View menu. From the View menu, only one Mouse GRAFIX window can be displayed at a time; the window always appears in the default location at the top left corner of the screen. To open more than one window, and to have full control over the window's placement and other attributes, use the DISPLAY command.

For more information on commands, refer to Chapter 4, *Running From the Command Line*. For complete information on running Mouse GRAFIX displays, including how to run several displays at a time, how to select and move windows, and more, refer to Chapter 5, *Running Mouse GRAFIX Displays*.

Display a GRAFIX Screen
Get GRAFIX Info
View Tag Status

Display a Trend
Get Trend Info

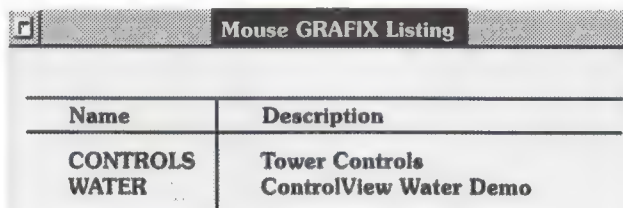
Get Data Logger Info
View Alarm Summary
View Suppressed Alarms

Run C-Toolkit Program

Get GRAFIX Info

Choosing *Get GRAFIX Info* calls up the Mouse GRAFIX Listing window:

Figure 3.3
Mouse GRAFIX Listing Window



Name	Description
CONTROLS WATER	Tower Controls ControlView Water Demo

42179

The window lists all Mouse GRAFIX displays in the Display File directory, and a description of the graphic.

You can run any of the Mouse GRAFIX files listed. First highlight one of the Mouse GRAFIX display names, then press **Enter**.

For complete information on running Mouse GRAFIX displays, including how to run several displays at a time, how to select and move windows, and more, refer to Chapter 5, *Running Mouse GRAFIX Displays*.

Display a GRAFIX Screen
Get GRAFIX Info
View Tag Status

Display a Trend
Get Trend Info

Get Data Logger Info
View Alarm Summary
View Suppressed Alarms

Run C-Toolkit Program

View Tag Status

View Tag Status displays the current value of a tag, or group of tags.

Choose *View Tag Status* and type in a tag name, including wild card characters if desired. The syntax for tag name wild card characters is as follows.

Table 3.A
Wild Card Characters

This character	will identify
*	all tags in one level of the database
?	one character in a tag or group name
+	when the + follows a group name, all points in the current and lower level groups where the + precedes a point name, all the tags that have that point name when there are no group names, all tags in the database

Wild cards are not required with structure tags; if you specify the name of the structure, the status of all the members is displayed.

If a single tag name is given for location, database information (such as description, node, and address) will be displayed, along with the tag name and its current value.

If several tags are specified, a list of the tag names and values will be displayed. Any tags that do not fit in the display, can be seen by paging through the list (with **PgUp** and **PgDn**). The list can contain a maximum of 100 values.

Instead of specifying a tag name (with or without wild cards), you can specify a physical programmable address.

- For analog and digital tags, the format for specifying a node name and physical address is:

`$nodename::address` (There are no spaces in the string)

where:

`$` distinguishes a node name from a tag name

`nodename` is specified in the Node table

`address` is the PLC address syntax

Example: Valid PLC Address

A valid PLC address might look like this:

\$fred::N7:35

- For string tags, the format for specifying a node name and physical address is as shown above, followed by the length of the string. The length must be in the range 2 - 82 characters.

Important: String tags are a feature of Allen-Bradley PLCs. For specific information see the *A-B Drivers User Manual*.

Example: Reading a String at a PLC Address

Here's an example of a valid PLC address:

Status \$fred::N100:0 14

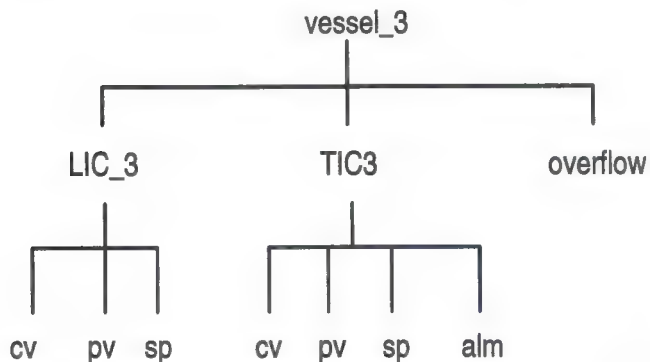
reads the value of a string 14 characters long, starting at the PLC address N100:0.

When the STATUS command reads string tags:

- all leading and embedded nulls (the value zero) are displayed as \00
- trailing nulls are not displayed
- leading and embedded blanks are displayed as the space character
- trailing blanks are displayed as \20
- \\ is displayed as \

Examples: View Tag Status

The following examples use this database:



Choose *View Tag Status*. When the window appears, type one of the following:

vessel3.TIC3.cv *press Enter*

to display information on the point vessel3.TIC3.cv

vessel3.TIC3.* *press Enter*

to display information on the four points in the TIC3 group

vessel3.+ *press Enter*

to display information on all points in the current and lower groups (in this example, that's all the points in the database)

+.pv *press Enter*

to display information on vessel3.TIC2.pv and vessel3.TIC3.pv

+ *press Enter*

to display information on all eight points in the database

Display a GRAFIX Screen
Get GRAFIX Info
View Tag Status

Display a Trend
Get Trend Info

Get Data Logger Info
View Alarm Summary
View Suppressed Alarms

Run C-Toolkit Program

Display a GRAFIX Screen
Get GRAFIX Info
View Tag Status

Display a Trend
Get Trend Info

Get Data Logger Info
View Alarm Summary
View Suppressed Alarms

Run C-Toolkit Program

Display a Trend

Trend plots are on-screen line graphs that represent tag values. They can be used to compare and analyze plant activity in many ways. As many as 16 separate lines can be plotted simultaneously. Plots can be created in real time as programmable controller activity changes the tag values, or they can be based on tag values stored in Data Logger files.

Choose *Display a Trend* and a list of trend files will pop up. Choose one, and it will appear in the default screen location and start to plot.

Trending is an optional ControlView module. Refer to the *Trending User Manual* for more information.

Get Trend Info

Choose *Get Trend Info* to bring up the Trend Listing window.

Figure 3.4
Trend Listing Window

Trend Listing	
Trend Display Directory: C:\access\trn	
Trend	Description
SAMPLE1	Sample trend display
SAMPLE2	Sample trend display
SAMPLE3	Oil and vinegar levels

43181

For more information, refer to the *Trending User Manual*.

Get Data Logger Info

Choose *Get Data Logger Info* to bring up the Data Logger Runtime-Model List Browser.

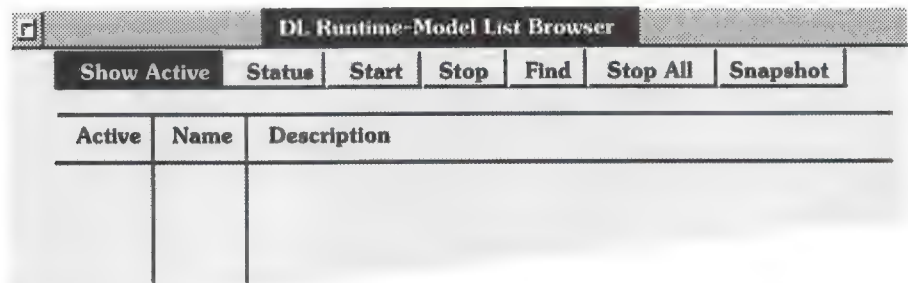
Display a GRAFIX Screen
Get GRAFIX Info
View Tag Status

Display a Trend
Get Trend Info

Get Data Logger Info
View Alarm Summary
View Suppressed Alarms

Run C-Toolkit Program

Figure 3.5
DL Runtime-Model List Browser Window



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You can control virtually all Data Logging runtime activities from this one window. You can start and stop individual models and stop all logging.

Data Logger is a useful ControlView module. For more information on using Data Logger, refer to the *Data Logger User Manual*.

View Alarm Summary

Choose *View Alarm Summary* to bring up the Alarm Summary display, which lists current, unacknowledged alarms. The Alarming module must be started before the summary page can be viewed.

For more information on alarms, refer to the *Alarming User Manual*.

View Suppressed Alarms

Choose *View Suppressed Alarms* to bring up the Alarm Suppression List display. It lists all alarmable tags that cannot report alarms, since alarm monitoring for them has been suppressed.

For more information on alarms, refer to the *Alarming User Manual*.

Display a GRAFIX Screen
Get GRAFIX Info
View Tag Status

Display a Trend
Get Trend Info

Get Data Logger Info
View Alarm Summary
View Suppressed Alarms

Run C-Toolkit Program

Display a GRAFIX Screen
Get GRAFIX Info
View Tag Status

Display a Trend
Get Trend Info

Get Data Logger Info
View Alarm Summary
View Suppressed Alarms

Run C-Toolkit Program

Display a GRAFIX Screen
Get GRAFIX Info
View Tag Status

Display a Trend
Get Trend Info

Get Data Logger Info
View Alarm Summary
View Suppressed Alarms

Run C-Toolkit Program

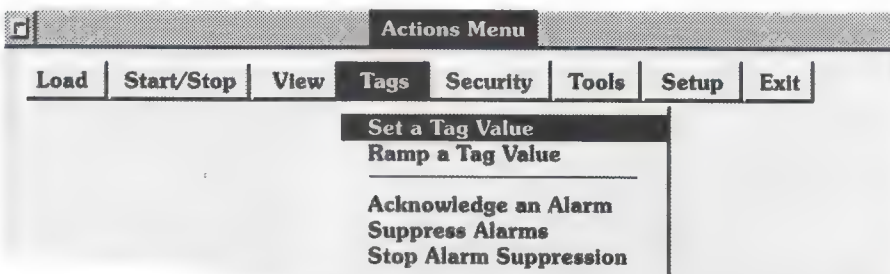
Run C-Toolkit Program

Choose *Run C-Toolkit Program* to start a C-Toolkit task. A list of C-Toolkit programs in the \ACCESS\CTK\TSK directory will pop up; choose one, and it will load and run.

Important: If your C-Toolkit program requires parameters, you must test it from the command line. Refer to Chapter 4, *Running From the Command Line*.

Custom C-Toolkit tasks are developed using the C-Toolkit option and a C compiler. The C-Toolkit is not required to run tasks once they have been developed. For more information, refer to the *C-Toolkit User Manual*.

The Tags Menu



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The Tags menu allows you to change tag values in the database, respond to tags which have triggered alarms, and suppress alarm monitoring on specific tags or groups of tags.

Set a Tag Value
Ramp a Tag Value

Acknowledge an Alarm
Suppress Alarms
Stop Alarm Suppression

Set a Tag Value

Set a Tag Value lets you change a tag's value. If the tag is not local, a write will be performed directly to a PLC address. This can also be accomplished with the SET command.

Choose *Set a Tag Value* and a data-entry window will open. Type in the name of the tag and the value to write, in this form:

`<tagname> <value>`

In this expression, `<tagname>` is EITHER:

- a valid tag name, such as:

`tank.level`

OR

- a node name and physical address in this format:

`$nodename::address` (There are no spaces in the string)

where:

<code>\$</code>	distinguishes a node name from a tag name
<code>nodename</code>	is specified in the Node table
<code>address</code>	is the PLC address syntax

Example: Valid PLC Address

Here's an example of a valid PLC address:

`$fred::N7:35`

And `<value>` is one of the following:

For analog tags:

- Numeric value within the range specified by the tag's Minimum and Maximum values in the tag database.

If the value specified is outside the range between Minimum and Maximum, the write will not be performed, and an error message will be displayed

- Percentage of the total range between Minimum and Maximum. The formula is:
$$\text{value} = \text{Min} + (\text{percentage}/100 * (\text{Max} - \text{Min}))$$
- Tag name of another analog or digital tag.

Important: For direct addressing, the value must be within the valid data range of the physical address being written to.

For digital tags:

- Numeric value zero (0) or one (1)
- Tag's ON or OFF label as specified in the database. Setting a digital tag to its ON label will write the value 1 to the programmable controller; setting it to its OFF label will write the value "0".
- Tag name of another digital or analog tag. If it is an analog tag with a value that is *not* 0, the value 1 is written to the digital tag, otherwise the value 0 is written.

Only numeric values can be used when writing directly to a programmable controller location, since Minimum, Maximum, and ON/OFF labels are not recognized by the controller.

For string tags:

- Another string tag.
- A group of characters enclosed in quotes. Escape sequences and any characters, including leading, embedded and trailing blanks and quotes can be used. However each single backslash character \ must be entered either as a double backslash \\ or the escape sequence \5C. The string can be any length, as long as it fits in the window's data entry field. The value is null padded to the length of the tag. If the tag is written to the string section, the value is null padded to 82, regardless of the tag length.
- If <value> is omitted, the Set String Tag window is displayed, allowing you to type in a longer string value (maximum 82 characters). The window accepts the same characters as the data entry field, except that each trailing blank must be entered as an escape sequence (\20). The value is null padded to the length of the tag. If the tag is written to the string section, the value is null padded to 82, regardless of the tag length.
- If the address is a PLC address, the value in quotes must be followed by /Lnn where nn is the length of the tag. The length must be in the range 1-82. The value is null padded to the length specified, then written to the PLC.

Important: If the PLC address is in the String Section, the value is null padded to 82 characters, irrespective of the length specified, so that a string of 82 characters is written to the PLC.

Example: Using SET to Write a String to a Database Tag Referencing the Integer PLC Section

The PLC contains the following values starting at address N100:0

Hex Value	41 42	43 44	45 46	47 48	49 4A	4B 4C	4D 4E	4F 50
Character	A B	C D	E F	G H	I J	K L	M N	O P

The database string tag has been defined as 10 bytes.

This command is entered:

SET oil_value "\23-" where - represents a space

The entry is null padded to the database string tag length of 10 characters.

The PLC now contains the values:

(where - represents \20 (blank) and _ represents \00 (null))

Hex Value	23 20	00 00	00 00	00 00	00 00	4B 4C	4D 4E	4F 50
Character	# -	_ _	_ _	_ _	_ _	K L	M N	O P

Then this command is entered:

STATUS oil_value

The Status window displays:

#\20

This is the value of the database string tag (10 characters), the 8 trailing nulls are not displayed.

Example: Using SET to Write a String to a Database Tag Referencing the String PLC Section

The PLC contains the following values starting at address ST10:0

Hex Value	4142	4344	4546	4748	494A	4B4C	4D4E	4F50
Character	A B	C D	E F	G H	I J	K L	M N	O P

The database string tag has been defined as 10 bytes. However, when writing to the string PLC section, ControlView ignores this and writes 82 characters.

This command is entered:

SET oil_name "\23--" where -- represents a space

The entry is null padded to 82 characters.

The PLC now contains the value:

2320 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
0000 0000 (82 characters)

Then this command is entered:

STATUS oil_name

The Status window displays:

#\20

This is the value of the database tag (10 characters), the 8 trailing nulls are not displayed.

Example: Using SET to Write a String Directly to a PLC Address in the Integer PLC Section

The PLC contains the following values starting at address N100:0

Hex Value	4142	4344	4546	4748	494A	4B4C	4D4E	4F50
Character	A B	C D	E F	G H	I J	K L	M N	O P

This command is entered:

SET \$fred::N100:0 "\23-" /L12 where - represents a space

The entry is null padded to the length of 12 characters.

The PLC now contains the values:

(where - represents \20 (blank) and _ represents \00 (null))

Hex Value	2320	0000	0000	0000	0000	4B4C	4D4E	4F50
Character	# -	- -	- -	- -	- -	- -	M N	O P

Then this command is entered:

STATUS \$fred::N100:0 14

The Status window displays:

#-\00\00\00\00\00\00\00\00\00\00MN

This is the PLC value (14 characters), where - represents a space

Example: Using SET to Write a String to a PLC Address in the String PLC Section

The PLC contains the following values starting at fred::ST10:0

Hex Value	4142	4344	4546	4748	494A	4B4C	4D4E	4F50
Character	A B	C D	E F	G H	I J	K L	M N	O P

This command is entered:

SET \$fred::ST10:0 "\23-" /L10 where - represents a space

The entry is null padded to 82 characters.

The PLC now contains the value:

2320 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
 0000 0000 (82 characters)

Then this command is entered:

STATUS \$fred::ST10:0 14

The Status window displays:

#\20

This is the PLC value (14 characters), the 12 trailing nulls are not displayed.

Example: Using SET Incorrectly to Write a String to a PLC address in the Integer PLC Section

The PLC contains the following values starting at address N100:0

Hex Value	4142	4344	4546	4748	494A	4B4C	4D4E	4F50
Character	A B	C D	E F	G H	I J	K L	M N	O P

This command is entered:

SET \$fred::N100:0 "\23-" /L13 where - represents a space

An error message is generated because an odd number has been specified for the length. The byte count must be even in the integer PLC section.

Examples: Set Tag Value

The following examples are responses to the prompt from the screen:

Enter [tagname] [value]

tank.level 50%

if Minimum = -100 and Maximum = 900, the command would write the value 400 to the programmable controller, according to the formula below:

$$\begin{aligned}
 \text{value} &= -100 + (50/100 * (900 - -100)) \\
 &= -100 + (1/2 * 1000) \\
 &= -100 + 500 \\
 &= 400
 \end{aligned}$$

valve.23 open

uses the OPEN label for this digital tag to write a "1" to the programmable controller.

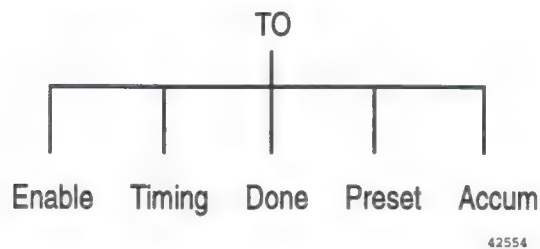
tag1 tag2

sets the value of tag1 to the value of tag2.

Important: You can set the tag value of any structure member in a structure tag, but not of the structure tag itself.

Example: Structure Tags and the SET Command

The database has a structure called T0 which represents a timer. This database structure looks like this:



This command is not allowed:

SET T0 1

and would result in an error, while this command would have the desired result:

SET T0.PRESET 1



ATTENTION: If a node has been disabled, the SET command will change the value in the Current Value Database, but not in the PLC.

Set a Tag Value
Ramp a Tag Value

Acknowledge an Alarm
Suppress Alarms
Stop Alarm Suppression

Ramp a Tag Value

Choose *Ramp a Tag Value* to add or subtract an amount to the value of a tag. This can also be accomplished with the RAMP command.

Important: Only analog tags can be ramped.

Choose *Ramp a Tag Value* and a data-entry window will open. Type in the name of the tag and the amount for the value to change, in this form:

<tagname> <value>

In this expression, *<tagname>* is *either*:

- a valid tag name, such as:

tank.level

OR

- a node name and physical address in this format:

\$nodename::address (There are no spaces in the string)

where:

<i>\$</i>	distinguishes a node name from a tag name
<i>nodename</i>	is specified in the Node table
<i>address</i>	is the PLC address syntax

Example: Valid PLC Address

Here's an example of a valid PLC address:

\$fred::N7:35

And *<value>* is an amount to add to or subtract from the current PLC value, either:

- Numeric value with a sign indicating add (+) or subtract (-)
- Percentage of the total range between Maximum and Minimum, with a sign indicating add (+) or subtract (-). The formula is:

$$\text{new value} = \text{old value} \pm (\text{percentage}/100 * (\text{Max} - \text{Min}))$$

Percentage values can only be used with tag names, they cannot be used with PLC addresses.

If the resulting value is outside the tag's range, the write will not fail. Instead, the highest or lowest allowable value will be written to the programmable controller.

Examples: Ramp Tag Value

The following examples respond to the prompt:

Enter [tagname] [value]

tank.level -10

if the value of tank.level is 50, the command will write the value "40" to the programmable controller.

tank.level +50%

if the value of tank.level is 100, MIN = -100 and MAX = 900, the command would write the value "600" to the programmable controller.

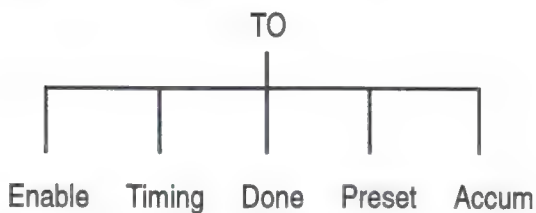
tank.level +75%

if tank.level is 900, MIN = 0 and MAX = 1000, the command will write 1000 to the programmable controller, as this is the highest allowable value.

Important: You can ramp the tag value of any structure member in a structure tag, but not of the structure tag itself.

Example: Structure Tags and the RAMP Command

The database has a structure called T0 which represents a timer. This database structure looks like this:



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This command is not allowed and would result in an error:

RAMP T0 1

While this command would have the desired result:

RAMP T0.PRESET 1



ATTENTION: If a node has been disabled, the RAMP command will change the values in the Current Value Database, but not in the PLC.

Set a Tag Value
Ramp a Tag Value

Acknowledge an Alarm
Suppress Alarms
Stop Alarm Suppression

Set a Tag Value
Ramp a Tag Value

Acknowledge an Alarm
Suppress Alarms
Stop Alarm Suppression

Set a Tag Value
Ramp a Tag Value

Acknowledge an Alarm
Suppress Alarms
Stop Alarm Suppression

Acknowledge an Alarm

Choose *Acknowledge an Alarm* and a data-entry window will open, where you can type in a tag name or wild card to name the alarm(s) to acknowledge.

For more information refer to the *Alarming User Manual*.

Suppress Alarms

Alarm suppression is useful when equipment must be stopped or opened for system maintenance; this would otherwise trigger alarms.

Choose *Suppress Alarms* and a data-entry window will open. Type in a tag name, or include wild cards to suppress a number of tags with one command. Alarms for that tag will not be reported until the tag is unsuppressed.

For more information refer to the *Alarming User Manual*.

Stop Alarm Suppression

Choose *Stop Alarm Suppression* and a data-entry window will open. Type in a tag name, or use wild card characters to remove suppression for a group of tags.

For more information refer to the *Alarming User Manual*.

Security Menu



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The Security menu allows users to log onto the system, log off, and change passwords.

The security system should first be set up using the Security menu options in the Setup menu. For complete information on setting up a security system, refer to the Security Menu section of Chapter 2, *The Setup Menu*.

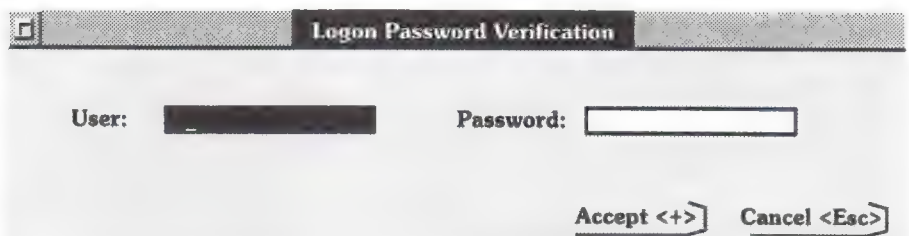
Operator Logon
Operator Logoff
Change Password

Operator Logon

To log onto the system:

1. Choose *Operator Logon* and a logon window appears:

Figure 3.6
Logon Password Verification Window



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2. Type in the User name and Password (for security reasons, the password is not displayed) and press **Enter**. You are logged onto the system.

Operator Logon
Operator Logoff
Change Password

Operator Logon
Operator Logoff
Change Password

Operator Logoff

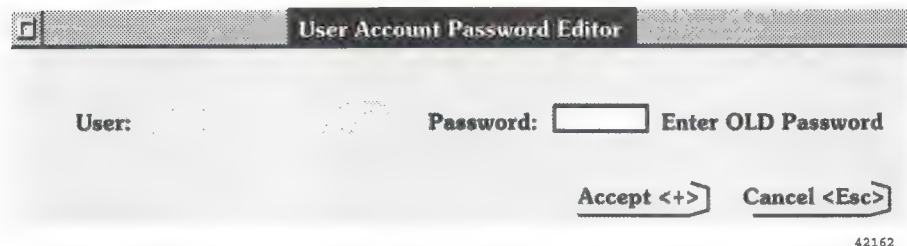
Before another user can log on, the current user must log off. To log off, simply choose *Operator Logoff* from the Security menu.

Change Password

Any user can change his or her password if they have the security classification to do so. To change a password:

1. Log on.
2. Choose *Change Password*, and the following window appears:

Figure 3.7
User Account Password Editor Window

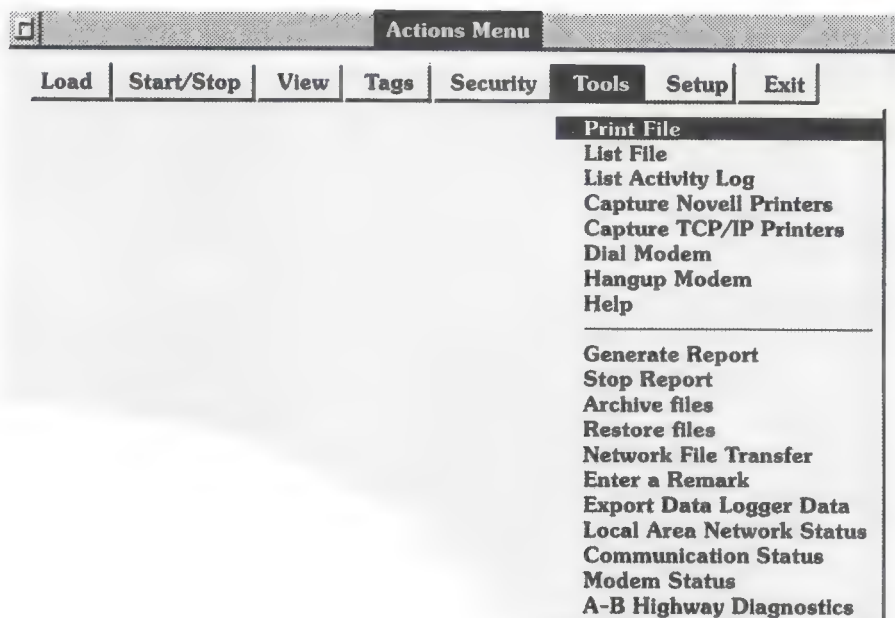


The image shows a screenshot of the 'User Account Password Editor' window. The window has a title bar with the text 'User Account Password Editor'. Below the title bar, there are two input fields. The first is labeled 'User:' and contains the text 'joe'. The second is labeled 'Password:' and contains the text 'Enter OLD Password'. Below these fields, there are two buttons: 'Accept <+>' and 'Cancel <Esc>'. The window is set against a light gray background.

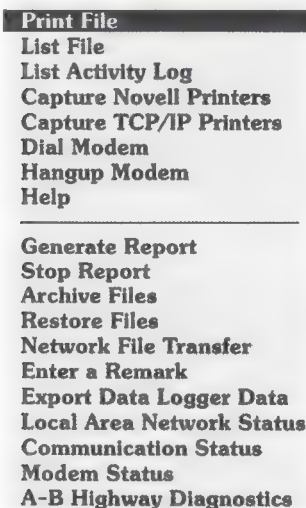
3. Type your current password, and press **Enter**. The password is not displayed in the window.
4. Type the new password, and press **Enter**. The password isn't displayed in the window. You'll be asked to type it a second time to make sure that it was typed correctly.

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Tools Menu



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Print File

Choose *Print File* to print an ASCII text file or a ControlView text file set. A window will open asking you which file to print. You can type in:

- the complete path name of a text file
- the name of the software subsystem that created the file set, preceded by the @ character.
To print the Activity Logger file set, type: @ACTIVITY
To print the Alarm history file set type: @ALARM

Using *Print File* is the same as printing an entire file using *List File*. The output will be printed on the printer that was selected in *Set Up List Print* under *Tools* in the Setup menu.

Important: *List File* only sends line-feeds at the end of each line of text. It does not send carriage returns. If you find each new line being printed directly below the end of the previous line, configure your printer to accept line-feeds only.

Important: You can also print a graphic image of the current screen, using the SCREENPRINT command. This command is only useful when one of your application's windows is on the screen, so it doesn't appear in any menu. You must have a graphic printer installed and defined in the Device Table before using the SCREENPRINT command. Refer to Appendix A, *ControlView Commands*, for complete information on the SCREENPRINT command.

Print File

List File

List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
Dial Modem
Hangup Modem
Help

Generate Report
Stop Report
Archive Files
Restore Files
Network File Transfer
Enter a Remark
Export Data Logger Data
Local Area Network Status
Communication Status
Modem Status
A-B Highway Diagnostics

List File

List File allows you to display and print the contents of a text file on the computer screen. The display options such as text size and colors are set in Configure List Utility, which is described in Chapter 2, *The Setup Menu*.

Choose *List File* and a window pops up prompting you to name the file.

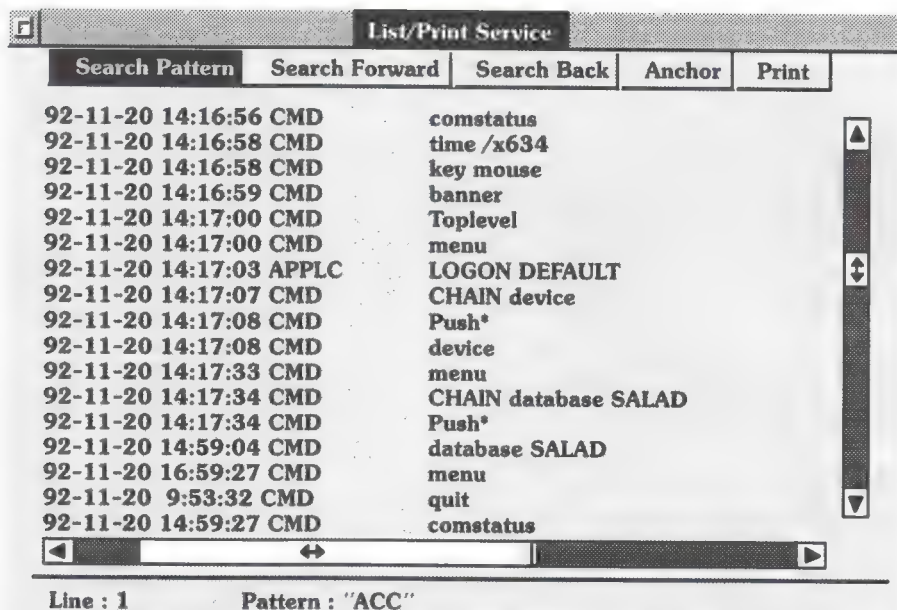
You can name either:

- the complete path name of a text file
- the name of the software subsystem that created the file set, preceded by the @ character.
To list the Activity Logger file set, type: @ACTIVITY
To list the Alarming file set, type: @ALARM

The file will appear on screen in the List/Print Service window.

Important: There can be more than one alarm log file set, but the special name @ALARM only refers to the alarm log file set which is named in the Alarm Logging Configuration window. The same is true of the Activity Log file set and the name @ACTIVITY.

Figure 3.8
List/Print Service Window



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The List/Print Services window and its operation are fully described in the Tools Menu section of Chapter 2, *The Setup Menu*.

- Print File
 - List File
 - List Activity Log**
 - Capture Novell Printers
 - Capture TCP/IP Printers
 - Dial Modem
 - Hangup Modem
 - Help
-
- Generate Report
 - Stop Report
 - Archive Files
 - Restore Files
 - Network File Transfer
 - Enter a Remark
 - Export Data Logger Data
 - Local Area Network Status
 - Communication Status
 - Modem Status
 - A-B Highway Diagnostics

List Activity Log

Choose *List Activity Log* to list the contents of the current Activity Log file set on the screen. This is actually just a quick way of accomplishing a List File of the @Activity file set. The List/Print Services window and its operation are fully described in the Tools Menu section of Chapter 2, *The Setup Menu*.

When viewing the Activity Log with List/Print, pressing **End** displays the most recently logged record, and pressing **Home** displays the oldest record.

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Capture Novell Printer

Choose *Capture Novell Printer* to open the network connection to the printer(s) on the Novell local area network (LAN).

For this menu item to work, the local area network must be properly connected, Novell's workstation software must be loaded (including RTXHELL), and the printer configuration must be defined. For further information, see Appendix D, *Running on a Network*. The Device Configuration window, the Printer Configuration Editor window and the Novell Printer Configuration window must be filled in correctly. *Configure Devices*, *Configure Printers* and *Configure Novell Printers* are under *Configure* in the Setup menu.

Print File
List File
List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
Dial Modem
Hangup Modem
Help

Generate Report
Stop Report
Archive Files
Restore Files
Network File Transfer
Enter a Remark
Export Data Logger Data
Local Area Network Status
Communication Status
Modem Status
A-B Highway Diagnostics

Capture TCP/IP Printer

Choosing *Capture TCP/IP Printer* opens the network connection to the printer(s) on the TCP/IP local area network (LAN).

For this menu item to work, the local area network must be properly connected, the third party TCP/IP s/w drivers must be loaded (including RTXHELL), and the printer configuration must be defined. For further information, see Appendix D, *Running on a Network*. Both the Printer Configuration Editor window and the TCP/IP Printer Configuration window must be filled in correctly. Both *Configure Printers* and *Configure TCP/IP Printers* are under *Configure* in the Setup menu.

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List File
List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
Dial Modem
Hangup Modem
Help

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Enter a Remark
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Dial Modem

Choose *Dial Modem* to establish a modem connection on the telephone.

The modem must be set up on both the Modem Configuration window and the Device Configuration window which you access by choosing *Configure Devices* under *Configure* in the Setup Menu.

The telephone number must be in the phone directory, which you access by choosing *Configure Phone List* under *Configure* in the Setup Menu.

Establishing a Modem Link

1. Choose *Dial Modem*. The Dial Command window is displayed.

Figure 3.9
Modem Dial Window

Modem Dial

Enter Modem you wish to dial with:

Enter Phone Directory name to dial:

Accept <+> Cancel <Esc>

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2. Fill in the fields as follows:
 - Enter Modem you wish to dial with:
Choose a modem from the popup list.
 - Enter Phone Directory name to dial
Choose a phone directory name from the popup list.
3. Choose *Accept* to perform the dial up, as defined in the phone directory.

If success/fail macros or commands have been specified in the phone directory for this entry, one will be executed depending on whether the phone connection is established.

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Capture Novell Printers
Capture TCP/IP Printers
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Archive Files
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Network File Transfer
Enter a Remark
Export Data Logger Data
Local Area Network Status
Communication Status
Modem Status
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Hangup Modem

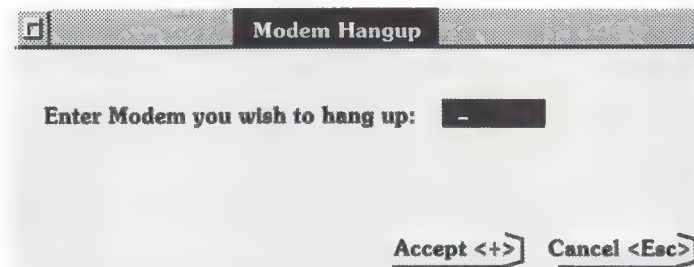
Choose *Hangup Modem* to terminate a modem connection.

The modem must be set up on both the Modem Configuration window and the Device Configuration window which you access by choosing *Configure Devices* under *Configure* in the Setup Menu.

Terminating a Modem Link

1. Choose *Hangup Modem*. The Modem Hangup window is displayed.

Figure 3.10
Modem Hangup Window



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2. Fill in the field as follows:
 - Enter Modem you wish to hang up:
Choose a modem from the popup list.
3. Choose *Accept* to terminate the phone connection to the modem.

If a hangup macro or command has been specified in the phone directory for this entry, it will *not* be executed when the phone connection terminates. Hangup macros or commands are only executed if the connection is lost due to a remote hangup or an activity timeout.

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Help

Choose *Help* to bring up ControlView's on-line Help system. The main Help menu lists topics on which Help is provided, from keyboard use to the commands in the various ControlView subsystems. Press the arrow keys or the **Tab** key to move from one menu item to the next. To get help on a topic, press **Enter** on the selection.

Note that the Help system is modifiable. For further information, refer to Chapter 6, *Customizing the System*.

Generate Report

Choose *Generate Report* to produce a report to the specifications defined in the Report Template. A pop-up list displays all the report templates.

Important: Note that parameter passing cannot be accomplished from the menu. To pass parameters, you must use the REPORTON command.

Reporting is an optional ControlView module. For further information see the *Reporting User Manual*.

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Stop Report

Choose *Stop Report* to stop the generation of reports.

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List File
List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
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Hangup Modem
Help

Generate Report

Stop Report

Archive Files

Restore Files
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Archive Files

File archiving refers to saving any of your ControlView files in a safe place, removed from the main hard disk. One of the regular archiving tasks would be to archive file sets such as the Activity Log file set, a Data Logger file set and the Alarm History file set.

You can archive any files you have created: Mouse GRAFIX displays, Data Logger models, Macro files, Key Definition files, and so on.

To archive any files, you will have to know the directory the files reside in, and the place you wish to archive to.

Choose *Archive Files* and a data-entry window opens. Type in the source and destination files as follows:

[*source*] refers to the location of the files you wish to archive:

- the drive letter
- the directory
- any DOS wild card shared by a group of files

[*dest*] refers to the disk or pathname to which you want the files copied. That destination can be:

- the drive letter
- the directory

The destination can be a local area network drive designation, another hard disk partition or a floppy drive. If the destination is a floppy drive, you will be prompted to insert another disk, when required.

When you restore the files using *Restore Files*, the [*source*] and [*dest*] values will be switched.

Examples: Archive Files

To save Activity Log files, named ACTLOG.000 through ACTLOG.009, from the ACCESS\LOG directory, to floppy disks in the A drive, respond in the following way to the prompt:

Enter [source] [dest]

@activity a:

A window will show the progress of the file copying.

To save all macro files to floppy disks in the A drive, respond in the following way to the prompt:

Enter [source] [dest]

\access\MCR*.* A:

Important: The ARCHIVE command offers many optional parameters. The parameters can also be typed into the *Archive Files* data-entry window. For details of the ARCHIVE parameters, refer to Appendix A, *ControlView Commands*.

Print File
List File
List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
Dial Modem
Hangup Modem
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Stop Report
Archive Files

Restore Files

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Restore Files

Restoring files is the reverse of archiving files. By choosing *Restore Files* and supplying the proper information, you can copy archived files back onto the ControlView disk into the directories from which they came. Most commonly restored are Data Logger log files, which can be used with the Trending application module to plot trend graphs of the data.

Choose *Restore Files* and a data-entry window opens. To restore files, type in the source and destination files as for *Archive Files*.

The *source* is the floppy disk or wherever you copied to using Archive; *destination* is the directory within the main ACCESS directory.

Examples: Restore Files

To restore Activity Log files named ACTLOG.000 through ACTLOG.009, from floppy disk to the ACCESS\ACT directory, respond in the following way to the prompt:

Enter [source] [dest]

A:*. * \ACCESS\LOG\ACTLOG

To restore macro files from floppy disks, respond in the following way to the prompt:

Enter [source] [dest]

A:*. * \ACCESS\MCR

Important: The RESTORE command offers many optional parameters. The parameters can also be typed into the *Restore Files* data-entry window. For details of the RESTORE parameters, refer to Appendix A, *ControlView Commands*.

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List File
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Dial Modem
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List File
List Activity Log
Capture Novell Printers
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Network File Transfer

Choose *Network File Transfer* if you want to copy a file from one ControlView node on the local area network to another. This is referred to as peer to peer transfer. A data entry window requesting source and destination will open.

Peer to peer networking is available in the Networking option. For more information, refer to the *Networking User Manual*.

Enter a Remark

Enter a Remark allows an operator to add a comment to the running activity log.

The Activity Log must be started before any remarks can be saved, and must be configured to log remarks.

Choose *Enter a Remark*, and a data-entry window opens. Type in your comment.

To verify that the comment was saved, you can choose *List Activity Log*. If the list of recorded activity is long, press the **End** key to jump to the bottom of the list. Your remark should be in the list, following the columns for date, time, and type of activity, (in this case REM, for remark). The entry might look something like the following:

```
92/09/11 10:45:33 REM my remark
```

Print File
List File
List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
Dial Modem
Hangup Modem
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Generate Report
Stop Report
Archive Files
Restore Files
Network File Transfer
Enter a Remark
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Export Data Logger Data

Choose *Export Data Logger Data* to convert data log files into ASCII file formats compatible with other application software, such as spreadsheet or database packages.

The Data Logger file export feature is described in detail in the *Data Logger User Manual*.

Print File
List File
List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
Dial Modem
Hangup Modem
Help

Generate Report
Stop Report
Archive Files
Restore Files
Network File Transfer
Enter a Remark
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Local Area Network Status

Choose *Local Area Network Status* to find out what peer ControlView nodes are active and what services are in use by which node on the local network.

For more information, refer to the *Networking User Manual*.

Print File
List File
List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
Dial Modem
Hangup Modem
Help

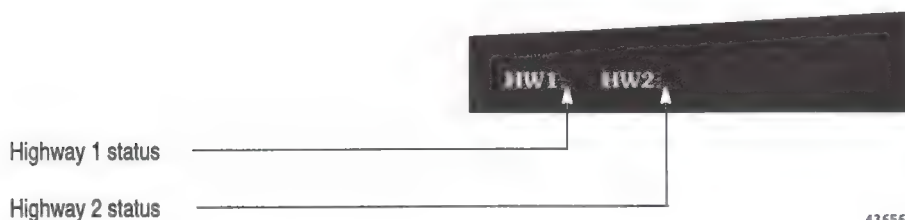
Generate Report
Stop Report
Archive Files
Restore Files
Network File Transfer
Enter a Remark
Export Data Logger Data
Local Area Network Status
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Communication Status

Choose *Communication Status* to change the Communication Status display. The Communication Status display shows the current state of communication on all data highways and networks.

The Communication Status display can be toggled on and off using the COMSTATUS command. The default is having the Communication Status display show all the time, in the bottom left corner of your screen (provided one or more data channels have been configured). You can change the color, size and position of the Communication Status display by selecting *Set Up COMSTATUS Display* from the *Tools* option of the Setup menu.

Figure 3.11
Communication Status Display



Choosing *Communication Status* pops up a list of the three choices.

- reset

Resets the display to the normal color setting.

When there have been no communication errors, the letters in the Communication Status display the normal color setting (the default is green on a black background). If a communication error is occurring, the letters become the error color setting (the default is black on a red background). When the error has cleared, the letters in the display turn to the history color setting (the default is yellow on a black background). To acknowledge that an error has occurred and return the display from the history color setting to the normal color setting, choose the "RESET" option.

- station

Displays the current station number in the communication status display.

■ messages

Displays the number of outstanding buffered message transactions in the communication status display. The range is 1-4. When the number is high, communications are loaded and may not be responding as quickly as configured.

The number of buffered message transactions indicates the communications load on the network, and, indirectly, the data update performance. It is a result of several factors, including the volume of communications, the volume of other traffic on the network, the efficiency of the CVD organization, and the efficiency of the communication interface modules.

If your ControlView system includes the Networking option, the communication status display will include a field called NW1 once the ControlView node is logged onto an active local area network. *Node* is the name of a ControlView node having service associations with the local node. (A service association exists when a remote node's services are being used by the local node, or when a remote node is using the local node's services.) For more detailed information see the *Networking User Manual*.

This field can be toggled off and on with the command NETSTATUS typed in the command line. There is no menu item for this command.

Print File
List File
List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
Dial Modem
Hangup Modem
Help

Generate Report
Stop Report
Archive Files
Restore Files
Network File Transfer
Enter a Remark
Export Data Logger Data
Local Area Network Status
Communication Status
Modem Status
A-B Highway Diagnostics

Modem Status

Choose *Modem Status* to view the current status of each modem on the Modem Status window.

Figure 3.12
Modem Status Window

Modem Status						
	DSR	CTS	DCD	DTR	RTS	Link State
Modem1	Active	Active	Active	Active	Active	Up
Modem2	Active	Active	Active	Active	Active	Up
Modem3						
Modem4						
Modem5						
Modem6						
Modem7						
Modem8	Inactive	Inactive	Inactive	Inactive	Inactive	Down
Cancel <Esc>						

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This window shows the actual state of the modem hardware signals and the logical state of the communication links. The window is updated every second.

Blank fields indicate that the modem is not defined.

This window is useful for diagnosing communication problems and in assisting with modem configuration.

If you use a breakout box the following table shows the required signals.

Table 3.B
Modem Signals

Modem Type	Data Transmission	Signals Required for Data Reception	Signals Required for Communication Link Up
NONE	none	none	not applicable
DIAL-UP	DSR & CTS & DCD	DSR & DCD	DSR & CTS & DCD
RTS-CONSTANT	DSR & CTS	DSR & DCD	none
RTS-TOGGLE	DSR & CTS	DSR & DCD	none

DTR is always active during a call until the hangup. A local hangup stops DTR for up to 3 seconds, causing DSR to stop, and terminate the connection.

If there is a problem, ensure that the cable is working properly and that the proper handshake signals exist. Double check that the modem still works under DOS.

A-B Highway Diagnostics

Choose *A-B Highway Diagnostics* to run diagnostic tests on your Allen-Bradley data highway and print the results.

For more information, refer to the *A-B Drivers User Manual*.

Print File
List File
List Activity Log
Capture Novell Printers
Capture TCP/IP Printers
Dial Modem
Hangup Modem
Help

Generate Report
Stop Report
Archive Files
Restore Files
Network File Transfer
Enter a Remark
Export Data Logger Data
Local Area Network Status
Communication Status
A-B Highway Diagnostics

Setup Menu



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Go to Setup Menu

Go to Setup Menu

To leave the Actions menu and change part of the system configuration, choose *Go to Setup Menu*. The Setup menu is described in Chapter 2, *The Setup Menu*.

Exit Menu



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Exit Menu System

Quit to DOS

Exit Menu System

ControlView can be run without the menu system: every menu item is also available as a command, and some lesser used features are only available as commands.

To run ControlView without using the menus, choose *Exit Menu System* from the Exit menu. The blue command line will appear at the bottom of the screen; otherwise the screen will be blank. To return to the menu system, use the MENU command.

For more information about using the command line to run ControlView, refer to Chapter 4, *Running from the Command Line*. Also refer to Appendix A, *ControlView Commands*, for a complete list of commands. At the end of this chapter is a table cross-referencing the Action Menu items and their associated commands.

Exit Menu System

Quit to DOS

Quit to DOS

Choose *Quit to DOS* to leave ControlView and return to the DOS operating system.

When you quit ControlView, all currently running foreground and background operations are aborted. Only the Application Window, if installed, continues to run.

The Actions Menu and Related Commands

Every item in the Actions menu has a command associated with it; choosing the menu item simply runs the command as if it was typed into the command line. Table 3.C lists the commands that are run when each menu item is chosen. These commands can be run from the command line, or be used in macros or key definitions.

Table 3.C
Actions Menu and Related Commands

Load	
Load Database	LOAD <database>
Unload Database	UNLOAD
Load Key Definitions	KEY <file>
Unload Key Definitions	KEY /R
Load Control Panel Keys	PANELON <file>
Unload Control Panel Keys	PANELOFF
Log On to Local Area Network	NETLOGON
Log Off Local Area Network	NETLOGOFF
Start/Stop	
Start Alarms	ALARMON
Stop Alarms	ALARMOFF
Start Alarm Handshake	HANDSHAKEON
Stop Alarm Handshake	HANDSHAKEOFF
Start Derived Tags	DERIVEDON <file>
Stop Derived Tags	DERIVEDOFF
Start Event Detector	EVENTON <file>
Stop Event Detector	EVENTOFF
Start Activity Logging	ACTIVITYON
Stop Activity Logging	ACTIVITYOFF
Start Data Logging	DATALOGON <model>
Stop Data Logging	DATALOGOFF <model>
Stop All Data Logging	DATALOGOFF /A

Table 3.D
Actions Menu and Related Commands (cont'd)

View	
Display a GRAFIX Screen	DISPLAY <file>
Get GRAFIX Info	DISPLAY
View Tag Status	STATUS <tag>
Display a Trend	PLOT <file>
Get Trend Info	PLOT
Get Data Logger Info	DATALOGON
View Alarm Summary	SUMMARY
View Suppressed Alarms	SUPPRESS
Run C-Toolkit Program	RUN <task>
Tags	
Set a Tag Value	SET <tag> <value>
Ramp a Tag Value	RAMP <tag> <value>
Acknowledge an Alarm	ACKNOWLEDGE <tag>
Suppress Alarms	SUPPRESSON <tag>
Stop Alarm Suppression	SUPPRESSOFF <tag>
Security	
Operator Logon	HELLO
Operator Logoff	BYE
Change Password	PASSWORD

Table 3.E
Actions Menu and Related Commands (cont'd)

Tools	
Print File	PRINT <file>
List File	LIST <file>
List Activity Log	LIST @ACTIVITY
Capture Novell Printer	CAPTURE
Capture TCP/IP Printer	LPRCAPTURE
Dial Modem	DIAL
Hangup Modem	HANGUP
Help	HELP <option>
Generate Report	REPORTON <template>
Stop Report	REPORTOFF <template>
Archive Files	ARCHIVE <source> <destination>
Restore Files	RESTORE <source> <destination>
Network File Transfer	REMCOPY <source> <destination>
Enter a Remark	REMARK <comment>
Export Data Logger Data	DATALOGEXPORT
Local Area Network Status	NETDIAG
Communication Status	COMSTATUS <options>
Modem Status	MODEMSTATUS
A-B Highway Diagnostics	ABDIAG
Exit	
Quit to DOS	QUIT

Running From The Command Line

With the Setup and Action menus you can access all of the important features of ControlView without the need to memorize commands, command syntax or parameters.

You can also run ControlView by typing commands directly into the command line, bypassing the data entry windows and pop-up lists which the menu system uses. Command parameters, both required and optional, provide added precision and control.

You can simplify command line operations by representing commands with symbols, creating macros, and assigning commands to keys. You can even create your own menu system using the same ASCII file format as the built-in ControlView menus.

Before you use any of these more advanced features of ControlView, you must learn about the ControlView commands and the syntax they require.

The Commands and the Menu Items

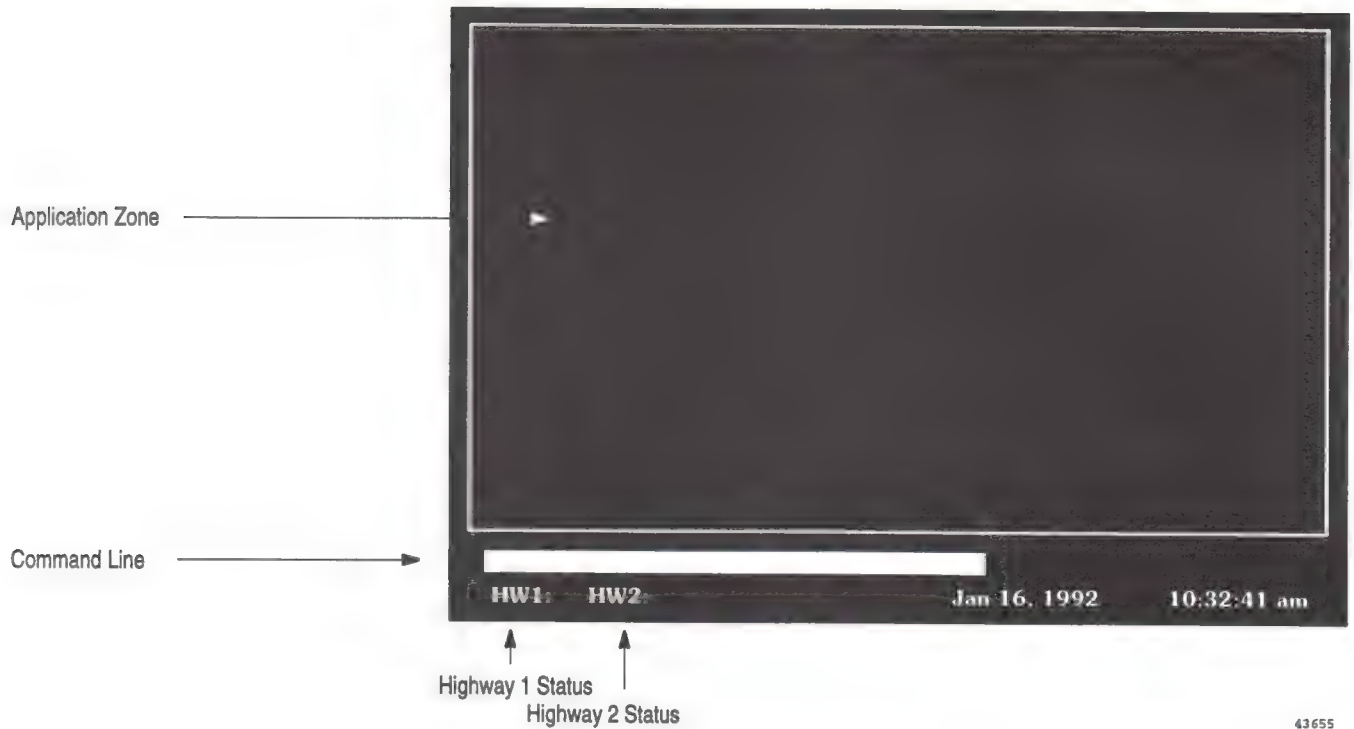
For every action performed by choosing a menu item, there is a command that can be run from the command line. In general, the commands offer more power and flexibility than the menu selections: most commands take parameters which offer more precise control than the related menu item. For example, you can choose to view a Mouse GRAFIX display by choosing *Display a GRAFIX Screen* in the View menu. The Mouse GRAFIX display will always open in the default window location. If you call up the same Mouse GRAFIX window by using the DISPLAY command, you can use parameters to precisely control the window location and size of the display.

Table A.A and Table A.B, at the beginning of Appendix A, show the ControlView menu items and the commands that perform the same action.

The ControlView Screen

The ControlView screen is composed of several areas.

Figure 4.1
The ControlView Screen



The Setup and Actions menus, and the screens you can call from them, are actually graphic windows in the application zone. These windows cannot be moved outside the application zone.

The command line, the blue text-entry line at the bottom of the screen, appears any time you press **Alt-C**, no matter what window or menu may be in the application zone. The command line is where you type commands.

Whenever you call up a window, the command line disappears, since the window will usually use its own set of keys. Pressing **Alt-C** brings the command line back, pressing **Alt-C** when it's on screen makes it disappear.

Running Commands Directly

Exit Menu System

Quit to DOS

To get to the command line, choose *Exit Menu System*, under Exit in either the Setup or Actions Menus.

The menu disappears and the command line appears at the bottom of the screen.

To execute a command, type in the command name and any parameters and press **Enter**. Some commands don't need parameters; for some, parameters are optional. You must always type a space between the command and the parameter, and between each parameter.

You can enter several commands on one line. Separate the commands with a semi-colon(;).

Example: Entering Multiple Commands

Entering these three commands in the command line:

```
alarmon; eventon; derivedon
```

starts all three options simultaneously

Many commands call up a window. The command line will disappear and the keyboard will be directed to the new window.

To get the menus back, use the **MENU** command.

To get the command line back, press **Alt-C**.

To add security to the command line, put security on **Alt-C**. In addition put security on **Alt-PgUp** as this key combination also provides access to the command line.

Error Messages

As soon as you start to operate ControlView without the built-in safeguards of the menu system, you're more likely to generate error messages. Error messages appear in colored windows, to inform you of something that the system could not do. Sometimes a message will appear just to inform you that the system is busy; this is to assure you everything is all right, while a time-consuming task is going on. An example of this is the message that appears while a database is loading.

An error message on screen prevents access to the standard keyboard keys. To clear an error message, click on *Accept* or press **Esc**.

Error messages come in green, red, and blue types. One special message is grey.

- **green** indicates that the message is informative, and there is no immediate action required. Some green messages disappear on their own: the “Loading database” message disappears when the database has been loaded. Others only clear from the screen when you press **Esc**.
- **red** indicates an error that requires action: for example, a task cannot be started because the required database is not loaded. When you see a red message, try to interpret the message and do something to rectify the situation.
- **blue** indicates an error that occurred while another error message was already on screen. You’ll only see a blue message when you have just cleared a red message: an error occurred but couldn’t be displayed until the red message had been removed from the screen. To clear a blue message, press **Esc**; if there are many blue messages waiting you can press **Del** to clear them all at once.
- the **grey** message is a warning that you are running out of video memory (usually by opening too many windows at the same time). This message tells you exactly what to do to regain memory before proceeding. A blue highlight bar will indicate what to remove.

Operating a Multi-Windowed Environment

One of the main benefits of running from the command line is the ability to have more than one window active on the screen.

With one window already on the screen, you can return to the command line without closing the window (by pressing **Alt-C**). From the command line you then call up another window.

The Selected Application

When there is more than one window visible on the screen, one of the windows will be *selected*. The window that is selected is frontmost, with a white border, while the other windows have a blue border. The selected window is “connected” to the keyboard; text entry, commands, or display-based keys are all directed to that window.

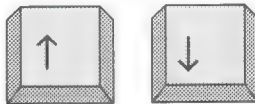
The Keys

Below is a list of the keys you use with the command line and with multiple windows.

Using the Command Line



Call up the command line. Pressing **Alt-C** a second time removes the command line, and returns to the previously selected window, if there was one.



Scroll through the last 16 commands entered on the command line.



Clear the command line.



Clear from the cursor's position to the end of the command line.



Move the cursor to the end of the command line text.



Move the cursor to the beginning of the command line text.

Selecting an Application

You can select an application by clicking-L on the window with the mouse, or by using keys.



Select the next window.



Select the previous window.



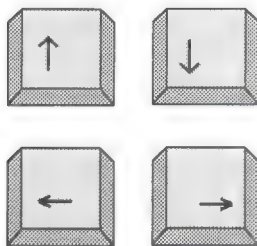
Close the selected window (and stop its application), or click-R.

Moving an Application

You can move a window by moving the mouse cursor to the title bar and dragging, or by using keys.



Turn on Move Window mode. When in this mode the selected window's border changes from white to flashing red.



Move the window 8 pixels horizontally, or 14 vertically.



Move the window to the upper left corner.



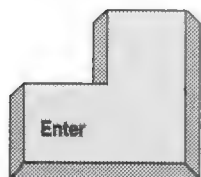
Move the window to the lower left corner.



Move the window to the upper right corner.



Move the window to the lower right corner.



Leave Move Window mode, placing the window in the new location.

An Example: Running from the Command Line

Follow through the steps below to get a quick feel for the command line, and how to bring up windows, move from window to window, and close them.

Important: This example uses the SALAD database and related Mouse GRAFIX files that are included with the ControlView Core, in the Getting Started Disk.

1. Leave the menu system. From the Exit Menu, choose *Exit Menu System*.

The command line appears and the application zone is blank.

2. Load a database with the LOAD command. Type:

load salad press *Enter*

The green message:

Loading Database SALAD

appears as the sample database loads, and disappears when the database has been loaded.

3. Call up one of the sample Mouse GRAFIX displays. Type:

DISPLAY SALAD press *Enter*

The main display for Phil's Salad Dressing appears—and the command line disappears. The keys identified in the display are now active: try any of the keys listed on the screen, such as F1 or F2. These keys are defined using Mouse GRAFIX Display Keys, so they are only active while the display is selected.

4. Get the command line back by pressing **Alt-C**.
5. Try making an error message appear, type:

DISPLAY QWER press *Enter*

A red message appears to tell you that no such file exists. Press **Esc** to clear the message, then **Alt-C** again to get the command line back.

6. Type:

display DETAIL *press Enter*

A second display opens, a detail display for Phil's Salad Dressings. It overlays half of the first window. Note that the current window of the two has a white border. Try any of the keys that functioned on the SALAD display. (Try **F8**, which brings up a tag status window.) They don't work, because the SALAD display is not the current window.

7. Select the first window again by pressing **Alt-N**. The main display covers the detail display.
8. Now press **F8**. A third window, a tag status window, opens. Try **Alt-N** again - you can move through the three windows in sequence. Try the keys described earlier in this chapter to select and move a window on the screen.

Note: If you open several tag status windows, you can approach the limits of video memory. It is easy to lose track of how many windows are on the screen when a large display hides them. The video memory message will warn you to remove some windows. You can scroll down through a list of all open windows and abort some, until only a few windows are open.

9. Press **Alt-N** until the main display is the current window. Press **Alt-C** and type:

RAMP OIL.LEVEL +75% *press Enter*

Now look at the oil tank. It should be full.

10. Type:

ramp oil.level -50% *press Enter*

The tank should now be half full. Note that, while the command line is open, the Mouse GRAFIX display keys are *not* active.

11. To end the example, clear the display, and unload the sample database. Type:

ABORT DISPLAY *press Enter*

to close all open Mouse GRAFIX displays.

12. Type:

unload *press Enter*

to unload the database.

Getting Help on Commands

ControlView has an on-line help system that provides information on how to use the commands.

To get help, type:

HELP *press Enter*

The menu window appears. Highlight a topic and press **Enter**.

You can also get help for a command directly, without going through the help menu. Type the **HELP** command, followed by the command you want help on, like this:

HELP [*command*] *press Enter*

Examples: The HELP Command

HELP

displays a menu of commands that you can get help on.

HELP ramp

displays help on the RAMP command.

HELP help

displays help on the HELP command.

Video Memory Constraints

To increase graphic drawing performance, ControlView stores all on-screen windows in the first 256K of video adaptor memory. For this reason, there is a limit to the number of windows you can display on the screen at one time. The “rule of thumb” is that you can display as many overlapping windows as would fit on two full screens, if no windows were overlapping. If you try to display more than this, you will run out of video memory.

When video memory runs out, ControlView displays an error message. The message asks you to remove one of the windows already on the screen before the system can display the window that you requested.

To ensure that there is always enough video memory for your next display, use *Set Up Window Removal* under Tools in the Setup Menu. This directs ControlView to automatically delete specific windows to free up enough video memory for the new display. You can specify either the oldest window or a window type.

Conserving Video Memory

There are some strategies you can employ to conserve video memory. You can work in menubar mode, chain commands, abort all previous displays and downsize windows.

Using Menubar

In menubar mode, the menu appears as a menu bar across the top of the screen, rather than as a full gray screen, each time you type the MENU command. This saves video memory as well as allowing you to create menus that can run over graphic displays.

To get into menubar mode:

1. Choose *Exit Menu System* from the Exit Menu.
2. Type **menubar** in the command line, to toggle into menubar mode.
3. Type **menu** in the command line, each time you want to display the menubar.

To exit menubar mode:

1. Choose *Exit Menu System* from the Exit Menu.
2. Type **menubar** in the command line, to toggle out of menubar mode.
3. Type **menu** in the command line, each time you want to display the full menu.

ControlView starts up in the menu mode that was active the last time it shut down. To ensure that ControlView remains in menubar mode, apply security to the MENUBAR command.

Chaining Commands

The CHAIN command saves the existing (up to 16) applications displayed on a screen before executing the next command. Use the CHAIN command to create a hierarchical sequence for displaying windows, while at the same time conserving video memory.

The CHAIN command is described in more detail, later in this chapter.

Aborting Previous Displays

Typing ABORT *; in front of a command, clears and deletes all previous displays from the screen before executing the command.

Example: Using ABORT *

ABORT *; DISPLAY STAIR
clears all previous windows from the screen, without saving them, then displays the Mouse GRAFIX display called STAIR.

Downsizing Windows

You can define the size of some display windows, including Mouse GRAFIX, Tag Status, Help and Alarm Summary. Keeping the windows small conserves video memory.

Chaining Applications

Typing the word CHAIN immediately in front of the command you want to run:

1. Saves the existing (up to 16) applications that were displayed on the screen
2. Clears the existing screen
3. Executes the command

When you exit from the command, the saved applications are redisplayed on the screen, just as they were when the CHAIN command was entered. Foreground C-Toolkit programs (those that do not use the ctk_stay_resident() function to run in the background) resume operation.

You can issue a series of CHAIN commands and then use **Esc** to move back through the chain of applications. To clear all chained applications in one step, use the CHAINCLR command.

Important: An application is any foreground program that can be run by ControlView, such as Mouse GRAFIX displays, C-Toolkit programs (unless they are explicitly developed as background tasks) or Trending displays.

Example: The CHAIN Command

The screen has three windows on it.

Type the command:

CHAIN LIST GACTIVITY

The three applications are replaced by the List/Print Services window.

Type the command:

CHAIN STATUS TAGX

The List/Print Services window disappears and the Tag Status window appears.

Pressing **Esc** restores the previous screen: the List/Print Services window replaces the Tag Status window.

Press **Esc** again and the List/Print Services window disappears, replaced by the original three applications.

Returning to the Menus

The MENU command returns you to the menu system. To call up the menus, type (in the command line):

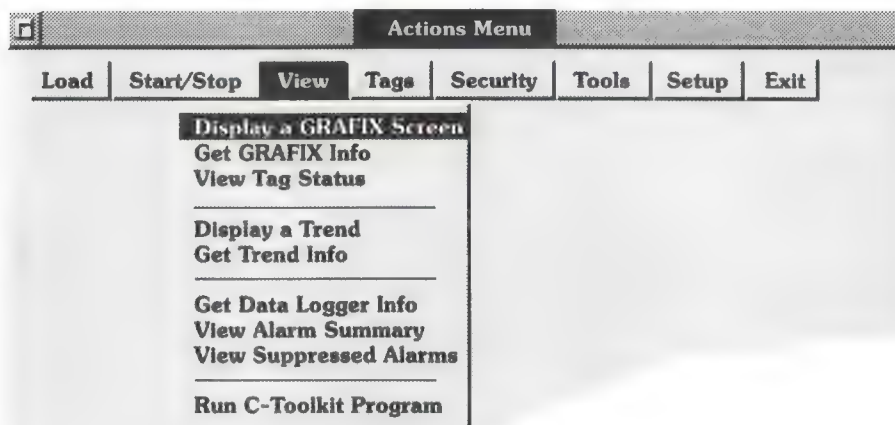
MENU press *Enter*

Running Mouse GRAFIX Displays

Loading a Display

The simplest way to load a Mouse GRAFIX display is to choose *Display a GRAFIX Screen* under View in the Actions menu.

Figure 5.1
Loading a Mouse GRAFIX Display



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Use the MENUBAR command to operate in menubar mode. Then you can use the mouse to select additional options from the menu, while you view a Mouse GRAFIX display. Menubar mode also frees up video memory for more displays.

For greater flexibility, use the DISPLAY command and its parameters.

To load a display, using the DISPLAY command:

DISPLAY [/U] [file] [tags] [size] [position] [/S] [/O]

The parameters are:

- [/U] automatically uploads tag values into all data entry fields in the display, one time only, when the display starts up
- [file] is the name of the Mouse GRAFIX display

[tags] can be one of these two things:
 /T followed by a list of tags
 /P followed by the name of the file that contains tag names to be substituted into the display

If the display file contains no “placeholders”, a parameter file is not necessary.

[size] . can be /Hnnn and or /Wnnn,
 /Hnnn sets height of window to *nnn* pixels;
 range is 0-310
 /Wnnn sets width of window to *nnn* pixels;
 range is 0-640

The dimensions of the window are measured from the top left hand corner of the screen. Only this portion of the display is shown, the objects are *not* resized to fit into the smaller window.

[position] specifies the position of the display as follows:
 /q1 top right corner
 /q2 top left corner
 /q3 bottom left corner
 /q4 bottom right corner
 /ct centered in the top half
 /cb centered in the bottom half
 /cl centered on the left side
 /cr centered on the right side
 /cc centered in the zone
 /xnnn positioned *nnn* pixels left
 from the edge
 /ynnn positioned *nnn* pixels down from the top

The position parameter is optional; the following defaults are used:

half-sized display (vertical)	left half (/cl)
half-sized display (horizontal)	top half (/ct)
quarter-sized display	top left quarter (/q2)

/S (silences) prevents the display of any warning messages, if the window clips an object

[/O] (overrides) prevents the **Enter** key from displaying the Key Command Menu for the selected object. This allows the **Enter** key to be defined for a different function.

Examples: The DISPLAY Command

Assume that *SAMPLE* is a quarter size display and *PICTURE* is a horizontal half size display.

DISPLAY

with no parameters, loads the Display File Browser

DISPLAY sample

places the quarter size Mouse GRAFIX window in the top left corner of the screen

DISPLAY picture /ptags /cb

places the horizontal half size display called *picture* in the bottom half of the screen, and uses the file called *tags* to substitute tag names

DISPLAY picture /h300 /w400 /s /cc /o

places the top left hand portion (measuring 300 x 400 pixels) of the display called *picture* in the center of the screen, without displaying any warning messages, and disables the **Enter** key

Operating a Display

There are several actions that can be performed on the display, including:

- using Batch and Data Entry fields for recipe management
- issuing commands with the Display Keys
- using the Key Command List

Recipe Management Functions

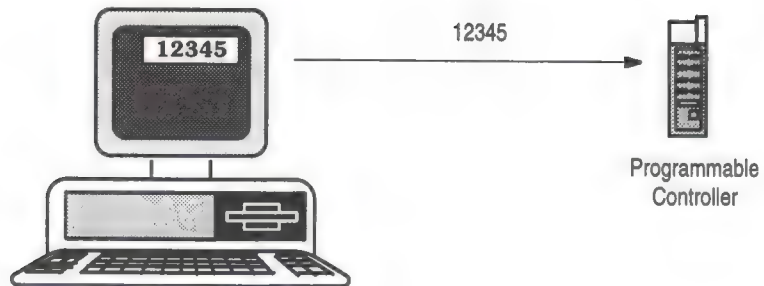
From a display you can view and change values in a PLC. To do this, you use data entry fields, string data entry fields and batch fields.

Data Entry Fields and String Data Entry Fields

Data entry fields and string data entry fields operate in the same way.

A display can have up to fifty data entry fields. You type a value into a data entry field and that value is written to the PLC. The result is the same as using the SET command.

Figure 5.2
Data Entry Fields

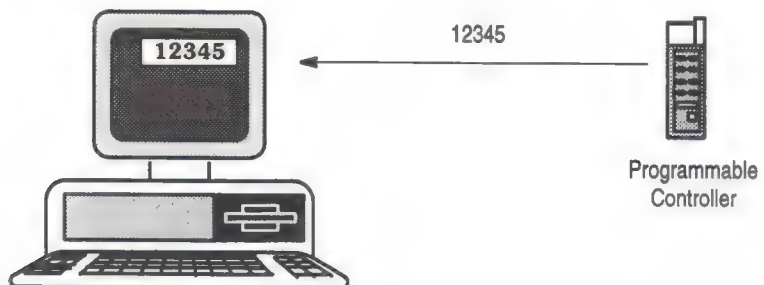


The number is typed into the data entry field and sent to the programmable controller by the operator.

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You can also use data entry fields for reading values from the programmable controller and displaying them on the screen.

Figure 5.3
Data Entry Fields



When the operator makes a request, the number is read from the programmable controller and is displayed on the screen.

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Operators can select any field in the display and read or write the programmable controller values associated with that field, or they can read or write the programmable controller values for all the fields at once. They can also read values from the programmable controller, modify these values, and write the changed values back to the programmable controller.

Important: Data entry fields are not dynamic, their values are only transmitted to and from the programmable controller, when the operator makes a request.

Data Entry Field Indexes

Data entry fields are indexed in the order they were originally defined on the screen. The first data entry field is assigned an index number of 1, the second 2, and so on. This index controls the order in which an operator, using a keyboard, can move through the data entry fields. There is no such limitation with a mouse.

This index is essential for the batch field, described later.

Keys Used With Data Entry Fields

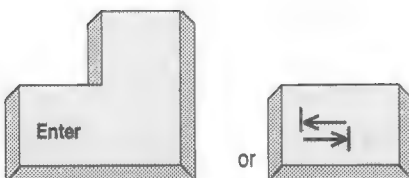
The following sections describes the keys that an operator uses with the data entry and string data entry.

When a display is loaded the cursor will be in the first data entry field. The operator can type a value into this field.

Moving Between Data Entry fields

With the mouse, select a data entry field by clicking on it with the mouse button, m1. Also use the mouse to position the cursor in the text of the data entry field by clicking with the mouse button, m1.

Selects the next data entry field.



Selects the previous data entry field.



The selected data entry field is blue, the non-selected data entry fields are grey.

Writing Values From the Data Entry Fields to the PLC

Writes the tag value in the selected data entry field to the PLC.





Writes the values for all of the data entry fields on the screen to the PLC. If a data entry field is blank, it will not be written to the PLC.



+



Reading Values From the PLC into the Data Entry Fields

Reads the PLC value into the selected data entry field.



Reads PLC values into all the data entry fields on the screen.

Batch Fields

The Batch field allows the operator to send a predefined "batch" of values to a PLC from a disk file, rather than having to enter the individual values into Data Entry fields and then write the values to the PLC. The operator can load all the values from the file into the data entry fields in the display by typing the name of the desired disk file into the Batch field. All these values can then be written to the PLC with a single command.

The operator can also save all the values in the data entry (and string data entry) fields to a disk file by reversing the procedure.

Batch Field Indexes

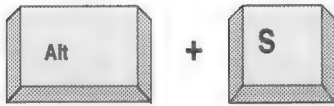
PLC values are recorded in the batch file by index. The format of the Batch file is:

```
1,value !Data Entry Field 1  
2,"value" !String Data Entry Field 2  
3,"value!" !String Data Entry Field 3
```

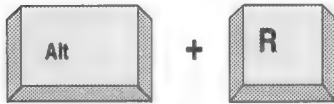
The first number is the index, followed by a comma and the PLC value you want to load into the Data Entry field. The ! marks the beginning of a comment. All characters on the same line, after the ! (and including the !), are ignored. However the string value, within quotes, can include an !.

To create the batch file, use a DOS text editor. On each line, enter the index number, a comma, and the value (with no spaces). String values must be enclosed in quotes, and not exceed 82 characters. The index numbers must start at 1, and increase by one to a maximum of 50. Save the file in the \ACCESS\MGX\BCH directory, and give the file a ".BCH" file extension. Alternatively, create the batch file automatically using the batch save feature from within a display.

Keys Used With Batch Fields



Selects the Batch field for Data Entry save. When the operator presses **Alt-S**, the cursor moves into the Batch field. The operator then types the name of the file they want to save the Data Entry fields to, and presses + to accomplish this save. If the file does not exist, it is created.



Selects the Batch field for Data Entry restore. When the operator presses **Alt-R**, the cursor moves into the Batch field. The operator then types the name of the file that contains the values to be loaded into the Data Entry fields, and presses + to accomplish this restore.

Key Command List

Objects on a screen can be named in the Key Command List. There are two uses for this list:

- each object in the list can be *selected*. The operator can perform operations on the selected object
- each object in the list can have up to ten commands associated with it. Each command is assigned to a Function key (or Function key combination, i.e., the Function keys combined with **Ctrl**, **Alt**, or **Shift**), or the mouse keys m1, m2 and m3. The operator selects an object, presses one of the Function keys, and the command is issued

Operating on the Selected Object

Each object in the Key Command List can have a tag associated with it. When the object is selected (and when the window is the selected window), this tag name is temporarily known throughout the the system as [tag].

Any command that requires a tag name as a parameter can substitute [tag] to operate on the selected object in the display.

Example: the [tag] parameter

STATUS [tag]

will bring up a status display of the tag associated with the selected object. The brackets *must* be included.

Other commands that can use the [tag] parameter include SET, RAMP and C-Toolkit applications.

The tag referred to by [tag] changes if a new display is selected.

Using the Key Command List to Send Commands

Any object in the Key Command List can have up to 10 commands assigned to it. Each command is mapped to a Function key (or a Function key combined with **Ctrl**, **Alt**, or **Shift**) or the mouse keys m1, m2 and m3. The operator selects the object and presses the key, or clicks on it with the mouse, the command is performed.

Examples: The Key Command List

In a display, there are three vats and three valves that control the flow from the vats. For each valve there is a custom Help window; and each valve is in the Key Command List. For each valve, F1 is defined as the HELP key. When the operator runs this display, he can select a valve and press F1 to get the appropriate help information.

Displays can also have defined keys that work anywhere in the display, regardless of which object is selected. These are Display Keys and are described later in this chapter. If, by error, the same key is assigned both a Display Key definition and a Key Command List definition, the Key Command List definition will prevail.

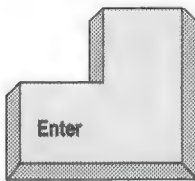
There are also system-wide Global Key Definitions. If the same key is assigned a Global Key Definition and a display definition, (Display Keys, Key Command List, or any other kind), the display-specific definition always prevails.

Viewing the Key Command List Legend

When running a GRAFIX display, you can select an object, then view a table of its ControlView commands and their related Function keys. This is the Key Command List.

With the mouse, click on an object twice with the mouse button, m1. The first click selects the object, the second click displays the Key Command List for the object. To select an object from the Key Command List, click on it.

To do this with keys, press:



to view the Key Command List legend. (This key is not available with the /O KEY parameter.)



to view the Key Command List legend.



to clear the Key Command List legend.



to clear the Key Command List legend.

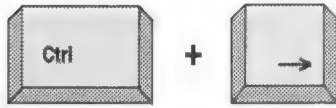
Selecting Objects in the Key Command List

When a Key Command List is defined, the first object placed in the list is assigned the index number 1, the second is assigned 2, and so on.

When the display is loaded, the object with index number 1 is automatically selected.

The selected object in a display is indicated by a green box displayed around the object (unless it's deliberately been turned off from within the Mouse GRAFIX editor).

The objects in the Key Command List can be stepped through in order of the indexes using the following keys:



Select the next object in the list.



Select the previous object in the list.

Alternatively, you can use the mouse to select objects.

You can jump directly to any index in the Key Command List using the following command:

POSITION *<position>*

where *<position>* is the index number in the Key Command List (1 to 50).

Objects which have been made invisible as part of their on-screen activity can still be selected and their commands can still be executed. Their selected state is shown by a green box.

You can also use the arrow keys by themselves to select objects that are in the same x or y plane. This is known as “geographical cursoring”.

Display Keys

Display keys are key definitions that are active whenever a display is selected. Up to ten Display Keys can be defined per display.

Display keys are not effective when the key is also defined in the Key Command List of the currently selected object. The Key Command List definition takes precedence whenever its object is currently selected.

Viewing the Display Key Legend

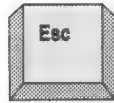
When running a GRAFIX display, it is possible to view a list of the Display Keys: the ControlView commands and their related Function keys. To do this, type:



to view the Display Key legend and Key Command List.



to clear the Display Key legend.



to clear the Display Key legend.

Customizing the System

There are five ways of customizing ControlView:

- **symbols** are a kind of shorthand; you replace long commands or commands with parameters, with short, easy commands
- **macros** replace a set of multiple commands with a single command. Several commands can be executed with one macro
- **keys** can have commands *or* symbols *or* macros, *or* a series of replacement keystrokes assigned to them
- **custom help files** can supplement or replace the built-in help system
- **custom menu files** can replace the built-in menus
- **C-Toolkit** programs can be created

Defining Symbols

A *symbol* is a new name for a command. A symbol can also incorporate a set of parameters for the command.

Symbols can be used almost anywhere a command would be used: in the command line, in macro files, or to define other symbols.

The DEFINE command creates symbols:

DEFINE <symbol> <string>

<symbol> is the new name for an existing command. <symbol> must be one word.

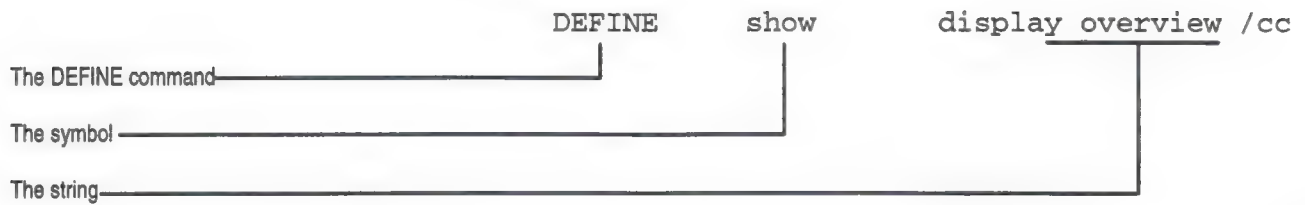
<string> is the original command with any parameters. <string> can be any number of words.

A symbol and a system command cannot have the same name. If a symbol and a macro have the same name, ControlView executes the symbol in preference to the macro.

If the DEFINE command is typed in the command line, it can't exceed the length of the command line (60 characters); if the DEFINE command is in a macro, the command, symbol and string can be up to 80 characters long.

The UNDEFINE command clears symbols from memory.

Figure 6.1
Using DEFINE



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You must define your symbol definitions each time ControlView starts up, or when a new operator logs on. Normally this is done in a macro. If symbols are put in the STARTUP macro, they will be defined at startup. Symbols can also be put in the Logon or Logout macro: each operator with a User Account can have a macro that runs when they log on or off the system.

Be aware that security cannot be placed on symbols - there is no way to deny certain users access to symbols. Be sure to undefine sensitive symbols during logoff.

Examples: DEFINE and UNDEFINE

DEFINE di display

abbreviates the command DISPLAY to the name DI. Typing DI will have the same effect as typing DISPLAY: that is, it will bring up a list of Mouse GRAFIX displays to choose from. The new symbol, DI, can be used in another symbol.

DEFINE show di overview /cc

creates the symbol SHOW, which is made up of the symbol DI, created above, and the parameters OVERVIEW /CC. Typing SHOW would display the Mouse GRAFIX display called "overview" in the center of the screen.

UNDEFINE show

clears the symbol SHOW.

UNDEFINE *

clears all defined symbols.

Creating Macros

A macro is a list of commands or symbols stored in an ASCII text file. The name of the macro is used just like a command; when the macro runs, each command in the file is started in rapid sequence. All the commands continue to run simultaneously until they have finished executing.

Use any DOS text editor that can produce ASCII text files to create the macro file. The default directory for macros is \ACCESS\MCR (see Changing the Macro Disk Directory, later in this chapter).

Running Macros

To run a macro, type in the full file name of the macro as if it were a command. Remember to include the file extension, if it exists.

Important: Make sure that macro names do not conflict with any command names or symbol names; if there is duplication of names, the macro name will be ignored.

Following are sample lines from an imaginary macro file called VIEW.

```
display overview  
display detail /q1  
set valve23 open
```

Typing VIEW in the command line would display a custom graphic called *overview*, then overlap it with a graphic called *detail* in the upper right quadrant, then set the tag *valve23* to its “open” state. The three commands are started in rapid succession, so they execute simultaneously.

Parameters

Like commands, macros can accept optional parameters. A percent (%) sign followed by a parameter number determines where a parameter should be placed within the macro.

For example, here's the same VIEW macro, modified to accept two parameters:

```
display overview
display %1 /q1
set valve23 %2
```

Typing VIEW DETAIL OPEN would substitute the parameters “detail” and “open” into the macro, making it perform the same actions as the original VIEW example.

Nesting Macros

Since macros are invoked as though they were commands, they too can be placed in macros; this is called nesting. Macros can be nested eight levels deep.

For example, a macro called DRAW contains the following:

```
DI overview
DI detail /q1
```

and a macro called VIEW contains the following:

```
draw
set valve23 open
```

Typing VIEW would perform the same actions as the original VIEW example. Note that the DISPLAY commands have been replaced by the symbol DI.

The STARTUP Macro

Whenever ControlView starts up, it looks for a macro file named STARTUP in the macro directory. If the file exists, ControlView runs it. The STARTUP macro is similar in concept to the DOS file AUTOEXEC.BAT.

A STARTUP macro is provided in the files in the ControlView disk set. The STARTUP macro is no different from any other macro, except that it runs automatically when ControlView is started. It can be modified, deleted, or moved to another directory.

The name of the STARTUP macro can be changed by typing:

STARTUP [*macro*]

[*macro*] is the file name of the macro to be run at startup. When ControlView starts up it will look for the file named [*macro*] instead of the file named STARTUP.

To run the STARTUP macro, exit ControlView then restart it.

Important: Typing STARTUP with no parameter resets the STARTUP macro file name to STARTUP.

The Logon Macro

Each person with a user account to operate ControlView can be given an individual Logon macro. The Logon macro has no special file name; any macro file can be a Logon macro. When a macro has been defined as the Logon macro for an individual user, that macro will run whenever the user logs on. An error is generated if the macro does not exist.

The Logon macro is named in the User Accounts Editor. To open the editor from the Setup menu, choose *Edit User Accounts* under Security, or use the ACCOUNT command.

The Logout Macro

Every user with an account can have a logout macro. Any user who has access to restricted displays should create a logout macro which closes those displays when they logoff. It is a good idea to include the CHAINCLR and ABORT * commands in the logout macro, to prevent unwanted errors if the new user selects Esc and brings up a graphic that they don't have access to.

Changing the Macro Disk Directory

ControlView looks for macros in the \ACCESS\MCR directory. However, you can change the directory for the macros with the MACRO command:

MACRO <directory>

<directory> is any valid DOS path name.

This setting is saved to disk, and will remain active the next time ControlView starts up.

The TOPLEVEL Macro

ControlView runs a macro called TOPLEVEL whenever the screen is empty. The TOPLEVEL macro is used by the default menu system to make sure the top level menu (the Setup menu) is always present. It is intended to prevent a user from pressing **Esc** and accidentally clearing the Setup menu.

Using the TOPLEVEL Macro in an Application

After your operator application is set up, you can use this feature so that the main window of your application is not cleared accidentally when the operator presses **Esc** or double-clicks on the Window Menu button.

A custom TOPLEVEL macro would generally contain a DISPLAY command, such as:

```
display overview
```

If **Esc** was pressed when the Overview display (or any display that has not been chained) was on the screen, the display would disappear. Immediately, the TOPLEVEL macro would run, and display Overview.

Important: If a C-Toolkit task is running, and it has not been defined as a background task (because it does not call the `CTK_STAY_RESIDENT()` function) the TOPLEVEL macro will not be executed.

If other displays have been chained together, **Esc** would have to be pressed until the chain stack was clear before the TOPLEVEL macro would run and display Overview.

The system can be configured not to execute the TOPLEVEL command by issuing the command TOPLEVELOFF from the command line. To re-enable, issue the TOPLEVELON command.

If a symbol and macro have the same name, ControlView executes the symbol in preference to the macro. If you create a symbol called TOPLEVEL, as long as the TOPLEVEL symbol exists, ControlView executes the TOPLEVEL symbol in response to the TOPLEVELON command. This enables you to create a new toplevel window.

Example: Creating a New Toplevel Window

To make the Mouse GRAFIX display OVERVIEW the toplevel window, use the following commands in a macro:

```
Abort * ! Close existing windows
Define TOPLEVEL display overview
Toplevelon ! Activate toplevel, if not active
Display OVERVIEW
```

The above macro creates a *symbol* called TOPLEVEL which displays the Mouse GRAFIX display called OVERVIEW. ControlView executes *symbols* before *macros*, so the *symbol* TOPLEVEL is always executed in response to the command TOPLEVELON.

To revert to the original TOPLEVEL, use the following commands in a macro:

```
Abort * ! Close existing windows
Undefine Toplevel ! Use original toplevel macro
```

In the above macro, the *symbol* TOPLEVEL is deleted. Now the macro TOPLEVEL is executed when all windows have been cleared from the screen (with the ABORT* command).

Macros and Video Memory

If you create macros that run multiple ControlView commands, you must be aware of ControlView's video memory constraints.

There is a limit to the number of windows you can display on the screen at one time. The "rule of thumb" is that you can display as many overlapping windows as would fit on two full screens. Trying to display more will cause ControlView to run out of video memory.

When video memory runs out, ControlView must close a window before it opens a new one. You can configure ControlView to automatically close the oldest or a certain type of window, by selecting *Set Up Window Removal* under Tools in the Setup Menu. Otherwise, ControlView pauses and asks you to specify which window is to be closed. With insufficient video memory, you won't be able to move any windows; ControlView beeps if you try.

You can use the CHAIN command to open a new window without worrying about running out of video memory.

When you want to run a ControlView command, you pass it as a parameter to the CHAIN command, like this:

CHAIN <command>

First, CHAIN clears the screen (remembering what applications were there) and then executes the command. When you exit the new window, the applications that were there previously, re-start. You can issue a series of CHAIN commands and then use **Esc** to back through the applications.

Example: The CHAIN Command

The screen has three windows on it.

Type the command

CHAIN LIST @ACTIVITY

The three applications are replaced by the List/Print Services window.

Type the command

CHAIN STATUS MUNICIPAL.PRESSURE

The List/Print Services window disappears and the Tag Status window appears.

Pressing **Esc** restores the previous screen: the List/Print Services window replaces the Tag Status window.

Press **Esc** again and the List/Print Services window disappears, replaced by the original three applications.

Creating Global Key Definitions

You can assign commands and macros to keys or key combinations. Available keys and key combinations are listed later in this chapter. Using key definitions reduces the likelihood of operator error, and simplifies operations overall.

There are two types of global key definitions, for the two kinds of keyboard:

- standard key definitions are for IBM AT style computer keyboards
- Control Panel Key definitions are for the Allen-Bradley CP14 Control Panel, a rugged industrial keyboard

Global Key Definitions for Standard Keyboards

A key or key combination can be assigned commands, macros, or simulated series of key presses.

Simulated key presses can fill in data fields, open the command line and print text in it, or open the command line and allow the operator to finish the command and press **Enter**.

Important: Don't confuse global key definitions with the keys defined in Mouse GRAFIX displays (Display Keys and the Key Command List). Mouse GRAFIX key assignments function only while a specific display is on-screen. Global key definitions are not restricted to a single display, but are active at all times.

If the same key has been assigned a global key definition *and* a display-specific definition, the display-specific definition will take precedence.

Key Definitions and the Application Window

When you use the Application Window option, you need to transfer keyboard control to the application you are running in the Application Window. To toggle between ControlView keyboard definitions and Application Window keyboard definitions, press **SysReq** or **Alt-SysReq**. A red flashing light at the bottom right of the screen indicates when the Application Window has control of the keyboard.

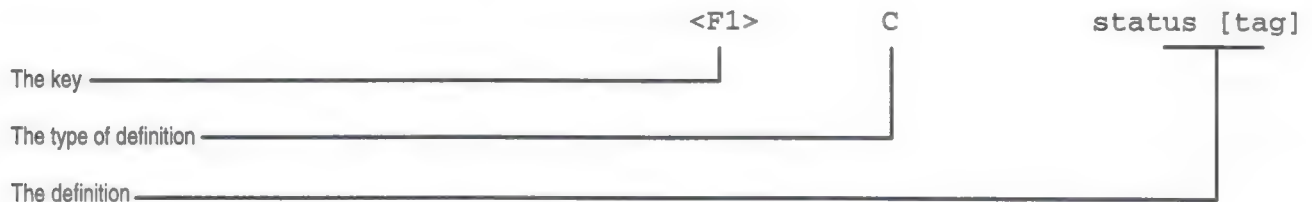
Defining Global Keys

Use a DOS editor to create a key definition file. This file must:

- reside in the \ACCESS\KEY directory
- have a .KEY file extension

Each line in the file should specify the key identifier, the type of definition (*c* for command, *s* for string), and each key's definition. A sample line is illustrated below:

Figure 6.2
A Line in a Key Definition File



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The **key** identifies the key or key combination which is being defined: see the tables in this chapter for valid combinations.

The **type of definition** may be *command* (C) or *string* (S):

- **command definitions** are executed immediately, without any data entry fields or command line input required. Use a command definition if you want the key to run a command (or series of commands, separated by semicolons) immediately, without input from the keyboard.
- **string definitions** are sent as if they were typed, i.e., they appear in the command line or in the current data entry field. Use a string definition if you want the operator to modify the command (for example, include a parameter) before it is executed, or if you want the operator to press a key to fill in a data entry field.

The **definition** is the command (or commands) you want performed, or the text string you want output when the key is pressed. This definition is typically a command or macro with parameters. Keystrokes can be added to the definition as well. For text to be entered, a data entry field or the command line must be available; they can be made available by adding keystrokes such as **Alt-C** to the definition.

The global key definition in the above illustration would send the command STATUS [TAG] when the F1 key is pressed.

Spacing and Comments in a Key Definition File

Each identifier, specification, or string must be separated by a space or a tab. Comment lines can be included in a file: the first character in the line must be an exclamation point (!), and the comment lasts until the next carriage return.

Keystrokes are represented by the name of the key, surrounded by the angle brackets < >. Preface the name of the key with "A-", "S-", or "C-" to represent the **Alt**, **Shift**, **Ctrl** keys respectively. For example, to perform the action of pressing **Alt-C**, include <A-C> in the file.

Examples: Lines From a Key Definition File

A Key Definition file could contain the following lines:

```
! F1 gives context-sensitive help
<F1>    c    HELP [help]
! Ctrl-Y opens command line and prints
! text: SET TAGY. The operator can type
! a value and press Enter
<C-Y>   s    <A-C>set tagy<space>
! Ctrl-X sets tag "tagx" to 35 and "tagy" to 10
<C-X>   c    set tagx 35; set tagy 10
```

Important: The definition for Ctrl-Y starts with the Alt-C keystroke. If the command line is already active, the definition will fail, since the Alt-C keystroke will close the command line, instead of opening it.



ATTENTION: Never create a "circular" set of key definitions, such as key F1 defined to send key F2, while F2 is defined to send F1. ControlView will cease to function and you will have to restart the computer.

Key Identifiers

Keys and Definitions

The following strings simulate pressing the keys on the keyboard. These strings can be used both at the beginning of the line, as **keys**, and at the end of the line, as **definitions**.

The strings can be entered in either upper or lower case letters.

Table 6.A
The Twelve Function Keys

F-keys	Shift-F-keys	Alt-F-keys	Ctrl-F-Keys
<F1>	<S-F1>	<A-F1>	<C-F1>
<F2>	<S-F2>	<A-F2>	<C-F2>
<F3>	<S-F3>	<A-F3>	<C-F3>
<F4>	<S-F4>	<A-F4>	<C-F4>
<F5>	<S-F5>	<A-F5>	<C-F5>
<F6>	<S-F6>	<A-F6>	<C-F6>
<F7>	<S-F7>	<A-F7>	<C-F7>
<F8>	<S-F8>	<A-F8>	<C-F8>
<F9>	<S-F9>	<A-F9>	<C-F9>
<F10>	<S-F10>	<A-F10>	<C-F10>
<F11>	<S-F11>	<A-F11>	<C-F11>
<F12>	<S-F12>	<A-F12>	<C-F12>

Table 6.B
Ctrl-alphabetic keys (alpha keys cannot be used by themselves)

<C-A>	<C-B>	<C-C>	<C-D>
<C-E>	<C-F>	<C-G>	<C-H>
<C-I>	<C-J>	<C-K>	<C-L>
<C-M>	<C-N>	<C-O>	<C-P>
<C-Q>	<C-R>	<C-S>	<C-T>
<C-U>	<C-V>	<C-W>	<C-X>
<C-Y>	<C-Z>		

Table 6.C
Alt-numeric keys (numeric keys cannot be used by themselves).
These are *not* the keys in the numeric keypad.

<A-1>	<A-2>	<A-3>	<A-4>	<A-5>	<A-6>
<A-7>	<A-8>	<A-9>	<A-0>	<A--> Alt-minus	<A-=> Alt-equals

Definitions Only

The following strings simulate pressing the keys on the keyboard. These strings can be used at the end of the line, as **definitions**. They *cannot* be used at the beginning of the line, as **keys**.

The strings can be entered in either upper or lower case letters.

Table 6.D
Alt-alphabetic keys

<A-A>	<A-B>	<A-C>	<A-D>	<A-E>	<A-F>
<A-G>	<A-H>	<A-I>	<A-J>	<A-K>	<A-L>
<A-M>	<A-N>	<A-O>	<A-P>	<A-Q>	<A-R>
<A-S>	<A-T>	<A-U>	<A-V>	<A-W>	<A-X>
<A-Y>	<A-Z>				

Table 6.E
Other keys that can be used as definitions only

Keys	Alt-keys	Ctrl-Keys	Shift-Keys
<HOME>	<A-HOME>	<C-HOME>	
<END>	<A-END>	<C-END>	
<PGUP>	<A-PGUP>	<C-PGUP>	
<PGDN>	<A-PGDN>	<C-PGDN>	
<ENTER>	<A-ENTER>	<C-ENTER>	
<CR>	<A-CR>	<C-CR>	
<UP>	<A-UP>	<C-UP>	
<DOWN>	<A-DOWN>	<C-DOWN>	
<LEFT>	<A-LEFT>	<C-LEFT>	
<RIGHT>	<A-RIGHT>	<C-RIGHT>	
	<A-DEL>	<C-DEL>	
<INS>	<A-INS>	<C-INS>	
<TAB>		<C-TAB>	<S-TAB>
<SPACE>			
<BACK>			
<ESC>			
<SAVE> keypad plus			
<DEL-LINE> keypad minus			
<DEL-EOL> keypad asterisk	<A-*)>	<C-*)>	
	<A-/>	<C-/>	
		<C-5>	

Example: Use of **Alt** in a Key Definition

<F1> S <A-C> STATUS <SPACE>

With this definition, pressing **F1** will cause the command line to be displayed (**Alt-C**) and the STATUS command entered. The operator then types the name of a tag and presses **Enter**.

Example: Invalid Key Assignment in a Key Definition

```
<A-S> C STATUS [TAG]
```

Because you cannot redefine **Alt**-letter or **Alt**-number combinations, the above definition is invalid.

Table 6.F
Defining Mouse Buttons

Button	Alt-Button	Shift-Button	Ctrl-Button
M1	A-M1	S-M1	C-M1
M2	A-M2	S-M2	C-M2
M3	A-M3	S-M3	C-M3

Important: Any mouse button assignments are dependent on the right-handed/left-handed mouse setting in the Mouse Configuration window. <m1> refers to the index finger button, and <m3> refers to the third finger button. <m2> refers to the middle button on a three button mouse.

Loading a Global Key Definition File

To load a key definition file, choose *Load Key Definitions* in the Actions menu, under Load.

Alternately, use the KEY command:

```
KEY <key_file>
```

<key_file> is the name of the key definition file (*without* the file extensions).

If you load more than one file, the key definitions merge. So long as the same key is not defined in both files, all the definitions stay in effect. If there are conflicts, the most recently loaded key definitions will be in effect.

To clear key definitions, choose *Unload Key Definitions* or type the command:

KEY /R *press Enter*

You may want to run this command as you open the Application Window option, to transfer keyboard control to the Application Window. When you leave the Application Window, you can run a macro that resets the key definitions for the ControlView Core. This is an alternative to using the **SysReq** or **Alt-SysReq** key to toggle keyboard control between the Application Window and the Core.

Control Panel Key Definitions

The Allen-Bradley CP14 Control Panel (6172-CP14) is a rugged keyboard designed to withstand harsh industrial environments. Due to the differences between it and a standard personal computer keyboard, a special key definition file type and some special commands are required.

Important: Control Panel Key definitions can only be used if ControlView has been configured to run a Control Panel keyboard. The Device Configuration setup options include PANEL1 and PANEL2 settings for the Communication ports. These settings are for Control Panel keyboards; the two settings allow two Control Panel keyboards to be attached simultaneously. Each can have its own key definition file.

Important: Unlike display-specific key definitions, such as those used in Mouse GRAFIX displays, Control Panel Key definitions are global; once a Control Panel key is assigned, the key assignment remains in effect throughout the system.

The important differences between key definitions for the standard IBM keyboard and Control Panel Key definitions are:

- Control Panel keys can have separate definitions for push and release.
- Control Panel keys are located by their row/column position on the keyboard, not by their key name.

Local display keys such as Mouse GRAFIX Display Keys and Key Command List keys can be run from the Control Panel *only* if the Control Panel key definitions “mimic” standard keyboard keys.

Defining Control Panel Keys

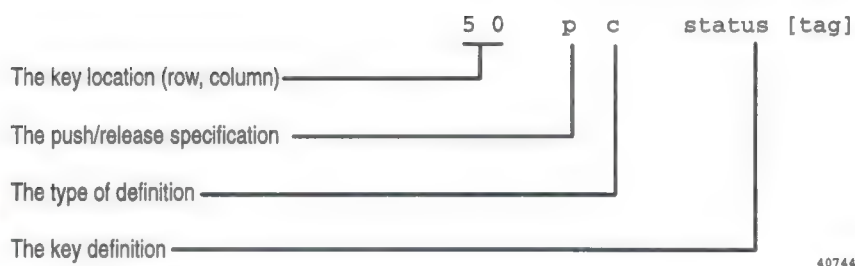
To define Control Panel keys, use a DOS editor to create a Control Panel definition file. This file must:

- reside in the \ACCESS\KEY directory
- have a .CP file extension

Each line in the file should specify the row, then the column of the key on the Control Panel, the type of key action (*p* for key push or *r* for key release), the type of definition (*c* for command, *s* for string), and each key's definition. A sample line is illustrated in Figure 6.3.

Figure 6.3

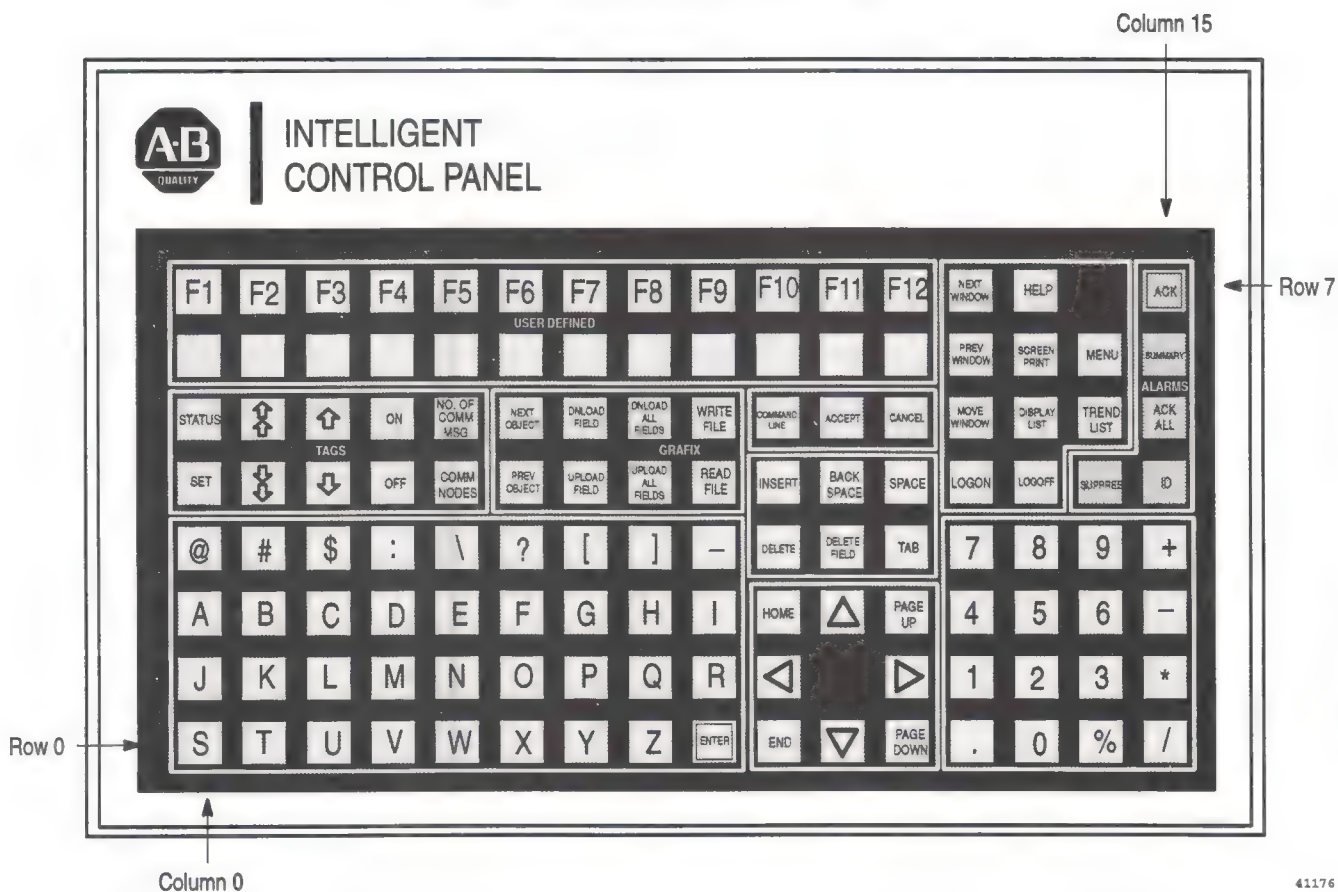
A Line in a Control Panel Key Definition File



Key Location Identifiers

The key location identifiers indicate which key on the Control Panel is being assigned a command.

Figure 6.4
Rows and Columns on the Control Panel



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- row: 0 to 7 (0 is the bottom row)
- column: 0 to 15 (0 is the leftmost column)
- push/release: the Control Panel senses the key press separately from the key release. The same key can have a push definition and a release definition
- type of definition: command/string
- key definition: command to perform, or keystroke(s) to output, as in standard keyboard key definitions. Several commands may follow one another, separated by semicolons

Spacing and Comments in a Control Panel Key File

As with Key Definition files, each identifier, specification, or string must be separated by a space. Comment lines can be included in a file: the first character in a comment line must be an exclamation point (!), and the comment lasts until the next carriage return.

Example: Lines From a Control Panel Key File

A Control Panel Key file could contain the following lines. Note that the lines beginning with exclamation points (!) are comments, describing the key assignments directly following.

```
! key 7 0 and 7 1 mapped to IBM function keys
7 0      p   s   <F1>
7 1      p   s   <F2>

! 5 0 and 5 1 run tag commands
5 0      p   c   status [tag]
5 1      p   c   ramp [tag] +5%

! 5 7 brings up mouse GRAFIX browser
5 7      p   c   chain display

! some Mouse GRAFIX action keys
5 8      p   s   <c-right>
5 9      p   s   <c-pgdn>
5 10     p   s   <pgdn>
5 11     p   s   <a-s><save><tab>

! 6 13 to log on
6 13     p   c   hello

! some alphabetic keys
2 0      p   s   a
2 1      p   s   b
2 2      p   s   c

! push to show tag status window
! release to close it
3 0      p   c   status [tag]
3 0      r   c   abort status

!three commands run by one key
7 11     p   c   status [tag]; ramp [tag] -5%; abort status
```

Loading a Control Panel Key File

Choose *Load Control Panel Keys*, under Load in the Actions menu, to load a Control Panel key definition file. Alternatively, use the PANELON command:

PANELON [*file*] [*/n*]

[*file*] is the name of the Control Panel Key file, without the path or extension characters. If no filename is provided, the default filename PANEL.CP is loaded.

[*/n*] is /1 or /2, corresponding to PANEL1 or PANEL2 in the Device configuration. If nothing is specified, PANEL1 is assigned the key definitions.

To remove a file of Control Panel key definitions, choose *Unload Control Panel Keys* under Load in the Actions menu, or use the PANELOFF command:

PANELOFF [*/n*]

[*/n*] is 1 or 2, corresponding to PANEL1 or PANEL2 in the Device configuration. If nothing is specified, PANEL1's key definitions are removed.

Examples: PANELON and PANELOFF Commands

PANELON *press Enter*

loads the Control Panel Key file named PANEL.CP, and assigns the key definitions in it to the keyboard PANEL1.

PANELON TEST /2 *press Enter*

loads the Control Panel Key file named TEST.CP, and assigns the key definitions in it to the keyboard PANEL2.

PANELOFF *press Enter*

removes the key definitions assigned to the PANEL1 keyboard.

PANELOFF /2 *press Enter*

removes the key definitions assigned to the PANEL2 keyboard.

Creating Help Files

ControlView has a built-in Help system that provides help on system commands, keyboard use, and the commands in each of the optional application modules. You can get help on any command by using the HELP command, which is fully documented in Appendix A, *Commands*.

You can add to the built-in Help system so that it provides help on symbols or macros that you have created, or you can replace the built-in Help with a Help system of your own. Yours need not be as complex as the built-in one; it could be as simple as one window of text. If you wish, however, you can create a sophisticated system of Help screens which call up further Help screens. Your Help screens can be colorful, full-screen or small windows, placed anywhere on the screen.

To add to or replace the built-in Help system, create Help files that follow the file format and file naming conventions described in this chapter. Help files are ASCII files, stored in the \ACCESS\HLP directory, whose names end with .HLP. They can be created by any DOS text editor that produces ordinary ASCII files. These files must follow the proper file format, and include not only the text to be displayed on screen, but code defining the text size and the color and the placement and size of the Help window on the screen.



ATTENTION: Two of the original files in the default Help system, SYSTEM.HLP and COMMANDS.HLP, should not be changed, or it is not guaranteed that the software will install or uninstall properly. You can, however, add to or replace the help system with your own help files.

Creating Help Displays

To create a custom Help display, use a DOS text editor to produce ASCII text files.

Type in the help message, making sure that there is at least one blank space at the beginning of each line of text. The space is necessary to differentiate text messages from labels and other display attribute syntax. The last line of the file must end with a carriage return; otherwise ControlView will not display that line.

The Help File Directory

Help files are in the \ACCESS\HLP directory. The name of each file is the name of the help topic (with the standard filename limit of 8 characters). The help file for a macro named OPENOIL would be named OPENOIL.HLP. Typing HELP OPENOIL in the command line (or including it in a symbol or macro) would display the help file.

If a symbol name exceeds eight characters in length, use the first eight characters as the file name and ControlView will interpret it. Therefore, a help file for a symbol named OPENALLVALVES would be named OPENALLV.HLP, and typing HELP OPENALLVALVES would display the file.

Example: A Simple Help File

To create the file that will be displayed when the user types

HELP me

create a file called ME.HLP in the "\ACCESS\HLP" directory.

The file might look like this:

```
This is a test  
of the help system
```

The Display Attributes

The position, size, and color attributes of a help window can be specified in the file, or at the moment the HELP command is executed.

If the attributes are defined in the help file, they will override parameters used with the command.

The following table lists all the parameters that can be included in the help file. Place these parameters at the beginning of a new line (with no leading space).

For example:

```
/F7 /B1  
  this is a test of the help system  
  with white text on a blue background
```

This help file will have a foreground color of white, and a background color of blue.

Help windows are automatically sized to fit the specified text, if the auto-sizing option is enabled (with the /a+ option).

If auto-sizing is disabled, and no size or location parameters are specified, help windows will be displayed in the entire top half of the screen.

Table 6.G
Parameters That Control Help Window Attributes

Parameter:	Use:																		
/As	Sets auto sizing mode, which sizes the window to fit the text message, where <i>s</i> is: + = enable - = disable																		
/lpath, filename, extension	Specifies the file to display, if no help topic is specified. The default is /lc:\ACCESS\HLP\SYSTEM,.HLP which displays the file: C:\ACCESS\HLP\SYSTEM.HLP where C is the drive where ControlView is installed.																		
/Tx	Sets the text font size, where <i>x</i> is as follows: s = small m = medium l = large																		
/Xnn	Positions the window <i>nn</i> characters from the left edge of the screen. Range of <i>nn</i> is based on desired text font size: small 0 – 77 medium 0 – 77 large 0 – 38																		
/Ynn	Positions the window <i>nn</i> characters from the top edge of the screen. Range of <i>nn</i> is based on desired text font size: small 0 – 37 medium 0 – 21 large 0 – 10																		
/Wnn	Sets the window width to <i>nn</i> characters. Range of <i>nn</i> is based on the text font size: small 0 – 77 medium 0 – 77 large 0 – 38																		
/Hnn	Sets the window height to <i>nn</i> characters. Range of <i>nn</i> is based on the text font size. small 0 – 37 medium 0 – 21 large 0 – 10																		
/Fnn	Sets the window foreground color, where <i>nn</i> is as follows: <table><tr><td>00 = black</td><td>06 = yellow</td><td>12 = red (blinking)</td></tr><tr><td>01 = blue</td><td>07 = white</td><td>13 = grey</td></tr><tr><td>02 = green</td><td>08 = navy</td><td>14 = yellow (blinking)</td></tr><tr><td>03 = cyan</td><td>09 = teal</td><td>15 = brown</td></tr><tr><td>04 = red</td><td>10 = blue (blinking)</td><td></td></tr><tr><td>05 = magenta</td><td>11 = orange</td><td></td></tr></table>	00 = black	06 = yellow	12 = red (blinking)	01 = blue	07 = white	13 = grey	02 = green	08 = navy	14 = yellow (blinking)	03 = cyan	09 = teal	15 = brown	04 = red	10 = blue (blinking)		05 = magenta	11 = orange	
00 = black	06 = yellow	12 = red (blinking)																	
01 = blue	07 = white	13 = grey																	
02 = green	08 = navy	14 = yellow (blinking)																	
03 = cyan	09 = teal	15 = brown																	
04 = red	10 = blue (blinking)																		
05 = magenta	11 = orange																		
/Bnn	Sets the window's background color, where <i>nn</i> is as in /F above.																		
/Mnn	Sets the menu highlight foreground color, where <i>nn</i> is as in /F above.																		
/Gnn	Sets the menu highlight background color, where <i>nn</i> is as in /F above.																		
/R	Reset command options to the default settings of: /X0,/Y5,/F0,/B13,/M7,/G1,/Tm,/A+,/lc:\ACCESS\HLP\SYSTEM,.HLP.																		

Important: ControlView help files use two parameters /N and /C to automatically build help files when options are installed. Do *not* use these parameters in your custom help files.

Page Breaks in Help Messages

If a help message is too long to fit into the window defined in the file, text will be clipped or thrown away. To avoid this, text can be broken up by creating page breaks, or by breaking the text up into more than one file.

When a page break is found in a Help file, the file stops printing and the text stays on screen until the user presses **PgDn**. The window clears, and the next block of text (up to the next page break) is displayed. The control code (a period) defines a page break.

For example:

```
/H3
this is line 1
this is line 2
this is line 3

this is line 4
this is line 5
```

This file defines a window that is three lines high. When this help file is displayed, lines 1 to 3 will be printed. The user can press **PgDn** to view the rest of the message, and **PgUp** to return to the first page.

Titles in Help Messages

A title in a help message is defined by the presence of the tilde (~) character at the beginning of the line. Each page with a title must have the title stated after the page break, preceded by a ~ character. To insert the title "ControlView Help Message", for example, the top of the page would read:

```
~ControlView Help Message
```

Menu Selections in a Help Display

Words within the help message can be marked as *menu selections*.

Important: These are *not* pull-down menus like the built-in Setup and Actions menus. Pull-down menus can also be created, but in a completely different manner, as described in the section *Creating Menu Files*, later in this chapter.

Menu selections in Help displays are words that can be *selected* by moving the cursor onto them. They then appear in reverse-video (white on blue) or in different colors if specified with the /M and /G parameters (see Table 6.G). When a word is selected, further information is displayed by pressing **Enter**.

To define a word as a menu selection, put quotes (") around the word in the text file. When the file is displayed in ControlView, the word will appear with a box around it.

You must also type the text to be displayed when the menu selection is chosen. To do this, create a label (another occurrence of the marked word, alone on a line, with no leading spaces). Follow the label with the text to be displayed.

For example:

```
/M6/G9
  This is a "menu" selection display. Selectable
    words are marked with "quotes".
menu
  This section will be displayed when menu is
    selected.
quotes
  This section will be displayed when quotes is
    selected.
```

This file, when displayed, will print the first two lines, with the words **menu** and **quotes** in boxes. Moving the cursor to one of these words will cause it to light up in yellow on teal; pressing **Enter** causes more information to be displayed.

Each of these sections of the file could in turn contain more menu selections, which would display new sections of the file, or loop back to existing labels.

Another way to select a menu item is to type the first letter of its name. The item does not actually have to be highlighted. In the previous example, typing "m" would be equivalent to moving the cursor to the word "menu".

If more than one item starts with the same letter, the earliest one in the file will be selected. Pressing the same letter again would select the next item.

Special Menu Selections in Help

ControlView recognizes four special menu selections that enable the operator to move from one menu page to another in the displayed menu.

These menu selections must be entered into the menu file *exactly as shown* below (word for word, space for space).

Table 6.H
Special Menu Selections in Help

This entry in the menu file:	Enables the operator viewing the displayed menu to:
" Next Page <PgDn> "	Move to the next Help page by: - pressing PgDn - selecting this box with the cursor or mouse
" Prev Page <PgUp> "	Move to the previous Help page by: - pressing PgUp - selecting this box with the cursor or mouse
" Backup to Previous Topic <Esc> "	Move to previous topic in Help by: - pressing Esc - selecting this box with the cursor or mouse
" Exit the Help System "	Exit from the Help system by: - pressing Del - selecting this box with the cursor or mouse

Linking to Other Help Files

When the text is very long, it can be easier to split it into separate files. This keeps the size of each file down, and also allows each file to be accessed separately from the command line, since each file name is also a HELP topic.

To link to other Help files, use the "@" symbol. For example:

```

select "one" or "two"
one
  @file1
two
  @file2

```

If you choose menu item "one", HELP jumps to the corresponding label "one". In this case, there is no text message defined, but rather a linking symbol, "@", and a file name. This closes the current file, and displays the file "file1.hlp", just as if "help file1" had been typed in the command line.

Printing Reserved Characters

Several characters are recognized by Help to indicate some form of control. These characters are % @ and ". To use these characters in a help message, type the character twice. Only one character will be printed.

For example:

```
This is the percent sign %% and here are  
some quotes "".
```

This file prints the following:

```
This is the percent sign % and here are  
some quotes " .
```

Do not use % @ and " characters in menu selection fields.

Help and Mouse GRAFIX Displays

You can create special help files for use with Mouse GRAFIX displays. The help files you create must have the same filename as the display itself, but with the file extension ".hlp". When the display is the current application, typing **HELP [help]** will display the help file with the matching name.

Example: The [help] Parameter

HELP [help]

Typing this command will display a custom help file called *overview.hlp* located in the \ACCESS\HLP directory, if the currently selected window is a Mouse GRAFIX display called "overview".

HELP help

Typing this command displays help files about the HELP command.

ControlView Menu Files

ControlView has a built-in menu system consisting of the Setup and Actions menus. The menu system can be replaced by a menu system of your own. To replace the built-in menus, create ASCII files using the file format described in this section. This includes the text for the main menu name, for each menu title, and for each item within a menu.

The menu system uses three files in the \ACCESS\MENU directory: SETUP.MNU, DEFAULT.MNU, and ACTION.MNU.



ATTENTION: The installed menu files ACTION.MNU and SETUP.MNU should *not* be changed. The INSTALL and UNINSTALL procedures overwrite the contents of these files. You can, however, replace the menus that the system uses with your own menu files by changing the contents of the DEFAULT.MNU file.

The DEFAULT Menu File

Menu files must be in the \ACCESS\MENU directory, and have the file extension .MNU. The default Startup macro loads the menu file named DEFAULT.MNU. If you want the system to start up with your menu file instead, you can replace the existing DEFAULT.MNU file with your own file of the same name, or load your menu file from the startup macro.

The original Setup menu (\ACCESS\MENU\DEFAULT.MNU) is a duplicate of the file \ACCESS\MENU\SETUP.MNU. This allows you to replace the DEFAULT.MNU file with a file of your own, without losing the original Setup menu file. If you later decide to return to the original menus, you can create a copy of the SETUP.MNU file and rename it as DEFAULT.MNU. You should *not* modify the existing Setup menu or Actions menu files.

Important: If you create your own version of DEFAULT.MNU, make sure to make a copy of the file: the INSTALL or UNINSTALL procedure overwrites the file, so you must re-install your file each time you add or remove an option.

About Menu Files

Menu files are ASCII files that contain the text for:

- horizontal menus
- vertical menus
- pop-up lists
- keywords and control codes that determine which commands are associated with which menu item
- background color

Calling Up a Menu File

To call a menu file from the command line, use the MENU command:

MENU <file> [option]

where:

<file> is the file name, without the path or filename extension, of a menu file in the \ACCESS\MENU directory. If no file name is given, the DEFAULT.MNU file will be used.

[option] is one of the following background colors

Table 6.1
Menu Background Colors

/Bnn	Sets the window's background color, where "nn" is as follows:	
	00 = black	08 = navy
	01 = blue	09 = teal
	02 = green	10 = blue (blinking)
	03 = cyan	11 = orange
	04 = red	12 = red (blinking)
	05 = magenta	13 = grey (default)
	06 = yellow	14 = yellow (blinking)
	07 = white	15 = brown

When operating ControlView, if you want to limit the amount of video memory that your menu system uses, use the MENUBAR command to operate in menubar mode. This also lets you create menus that run above graphic displays. See Appendix A, *Commands*, for details.

Creating Custom Menus

To create a menu system, use a DOS text editor to produce ASCII text files. Here are the instructions for creating a menu file. The order of items and the syntax must be followed precisely.

Menu Syntax

There are three parts to a menu file. They must be in the following sequence in the file:

1. Menu file configuration
2. Horizontal menu definition
3. Vertical menu definition(s)

Here are detailed instructions for creating the menu file:

Menu File Configuration

Refer to Figure 6.6 through Figure 6.9 while reading this section. Figure 6.6 is a menu example produced by a text file. Figure 6.7, Figure 6.8 and Figure 6.9 show the text file, including keywords and the order in which items must be placed to produce the menu in Figure 6.6.

There are three specifications in the Menu File Configuration. All are optional. If they are omitted, the default values are used.

1. The background color is defined using the statement:
`B/nn`
where *nn* specifies a color as shown above in Table 6.I.

If this statement is omitted, the default background color is 13 (grey).

2. The text for the top of list entry is defined using the statement:
`top_of_list =<text>`
where *text* specifies the text to be used.

If this statement is omitted, the default text is *—new—*

3. The text for an empty list is defined using the statement:
`empty_list =<text>`
where *text* specifies the text to be used.

If this statement is omitted, the default text is *No Items*

Horizontal Menu Definition

1. The first word line of the horizontal menu definition is always the following keyword:

`categories`

2. The second line, which is optional, defines the title of the menu. The syntax for the line is:

`header <title>`

where *title* is the title of the menu.

3. The items in the horizontal menu are listed, one item per line. Each item is indented one character space, so that the first character of each line is a space. The items are listed in menu sequence.
4. The last line is a single period, at the beginning of the line.
5. There can be no blank lines between the `Categories` keyword and the final period.

Vertical Menu Definition(s)

There must be one vertical menu definition for each menu. The sequence of the vertical menu definitions must match the sequence of the categories in the horizontal menu definition.

1. The first word line of each vertical menu definition is always the following keyword:

`items`

2. The second line, which is optional, defines the title of the vertical menu. This is the top entry in the menu and is displayed in blue.

- For the title to be non selectable, the syntax for the line is:

`header <title>`

where *title* is the title of the vertical menu.

- For the title to be selectable to execute a command, but not display the vertical menu, the syntax for the line is:

```
header <title> = <command>
```

where *title* is the title of the vertical menu and *<command>* is the command that will be executed, instead of the vertical menu appearing.

3. The items in the vertical menu are listed, one item per line. Each item is indented one character space, so that the first character of each line is a space. The items are listed in menu sequence. Each item definition must be contained entirely in one line and cannot be split over several lines.

The syntax for an item can be one of the following:

- To execute a command (or commands) when the item is selected:

```
<item> = <command> [ ; <command> ... ]
```

where *item* is the text for the item and *<command>* is the command that will be executed when the item is selected.

- To execute a command then exit from the menu system:

```
<item> = exitmenu [ <command> ]
```

where *<command>* is the command that will be executed when the item is selected.

- To prompt for missing parameters when the item is selected, pass the parameters to a command, then execute the command:

```
<item> = <command> = <parameters>
```

where *item* is the text for the item, *<parameters>* are the missing parameters and *<command>* is the command that will be executed when the item is selected.

The syntax for the parameters can be one of the following:

- [*text*]
displays *text* as a prompt next to a data entry field.
- @LIST <entry1> [entry2] [entry3]
provides a static list of entries.

- **@LP <list processor> 0**
creates a dynamic list of all currently defined items from a list processor. You must include the zero (0) at the end.

List processors are used to determine whether a file or directory is a valid database, GRAFIX display or trend display, depending on the list processor.

The following table shows the available list processors.

Table 6.J
List Processors

list processor	Represents this List Processor
DLP	Database List Processor
GLP	GRAFIX List Processor
TLP	Trending List Processor

- **@DIR[+] <path> <argument>**
creates a dynamic value list of filenames, based on the contents of the directory specified by the DOS file path <path>, and <argument> which can be any DOS wild card format (including * and ? characters).
- @DIR can be replaced with one of the following:
- @DIR. - to display file extensions with the file name
 - @DIR\ - to display a list of directories, not filenames
- + can be added to any of the 3 forms of @DIR, to place the top_of_list text at the top of the dynamic value list.
- **@DIR <CFG database key> <default path> <argument>**
creates a dynamic value list from a location in ControlView's CFG (configuration) database. The CFG database key is used to extract a pathname from the CFG database. If the CFG database key is not defined in the CFG database, the default path is used instead. Table 6.K summarizes the valid keys.

Table 6.K
CFG Database Keys

Description	CFG database key	default path
location of Activity log files	ACTIVITY_LOG	\ACCESS\LOG
location of Alarm history files	ALM_HISTORY	\ACCESS\LOG
location of database directory	DBS_BASE_DIR	\ACCESS\DB
destination of database export output	DBS_EXPORT_DIR	\ACCESS\UTIL
location of database import files	DBS_IDATA_DIR	\ACCESS\UTIL
location of database import specification files	DBS_ISPEC_DIR	\ACCESS\UTIL
location of Datalogger files	DLG_BASE_DIR	\ACCESS\DL
location of Derived Tags files	DTS_DIRECTORY	\ACCESS\DT
location of Event Detector files	EVS_DIRECTORY	\ACCESS\EV
location of Mouse GRAFIX batch files	MGX_BATCH	\ACCESS\MGX\BCH
location of Mouse GRAFIX display files	MGX_DISPLAY	\ACCESS\MGX\MGX
location of Mouse GRAFIX library files	MGX_LIBRARY	\ACCESS\MGX\LIB
location of Reporting class definitions	RPT_CLASS_DIR	\ACCESS\RPT\CLS
destination of Reporting output files	RPT_OUTPT_DIR	\ACCESS\RPT\OUT
location of Reporting templates	RPT_PLATE_DIR	\ACCESS\RPT\RPT
location of Trending files	TRS_DIRECTORY	\ACCESS\TRN
location of macros	CIN_MCRDIR_KEY	\ACCESS\MCR

@DIR can be replaced with one of the following:

- @DIR. - to display file extensions with the file names
- @DIR\ - to display a list of directories, not filenames

+ can be added to any of the 3 forms of @DIR, to place the top_of_list text at the top of the dynamic value list.

4. The last line of each vertical menu definition is a single period, at the beginning of the line.
5. A blank line between the items keyword and the final period will specify a horizontal separator line in the menu.

Figure 6.5
Keywords in a Menu

Header	
Category 1	Category 2
Item 1	Top_of_List Parameter1 Parameter2
Item 2	
Item 3	

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Special Characters and Syntax Rules

- any line starting with a ; is a comment and is ignored by the menu processor
- empty lines between menu definition sections are ignored
- Except for keywords, all text must be preceded by a space at the beginning of a line
- Empty lines, which begin with a space, between menu items are displayed as solid line separators (if the space is omitted an error is displayed when you attempt to display the menu)

Menu System Limitations

The following maximums apply to the menu system.

If any of these maximums are exceeded, an error will be displayed at runtime.

Table 6.L
Menu System Maximums

line length	100 characters
category length	40 characters
item length	40 characters
prompt length	40 characters
total length of categories (horizontal menu)	76 characters
number of categories	10
number of items (vertical menu)	30 in each menu
number of value list entries in @LIST command (also limited to 40 characters maximum for all entries)	10
number of dynamic value list entries found by the @DIR command	255

Security and Menus

The menu system checks for security on commands only, not on parameters. A command such as SET TAGY 10 would be checked for access to the SET command, but not for access to the tag. Therefore, security verification for Mouse GRAFIX displays and tag writes can only be accomplished from the command line.

If an operator does not have security privileges to a given command, the menu item corresponding to that command will not be selectable.

Commands and macros are checked for security, but symbols are not; therefore symbols should not be used in menu files.

Security treats the CHAIN and ABORT commands in a special way: the command immediately *following* CHAIN or ABORT is checked for security. In a line such as:

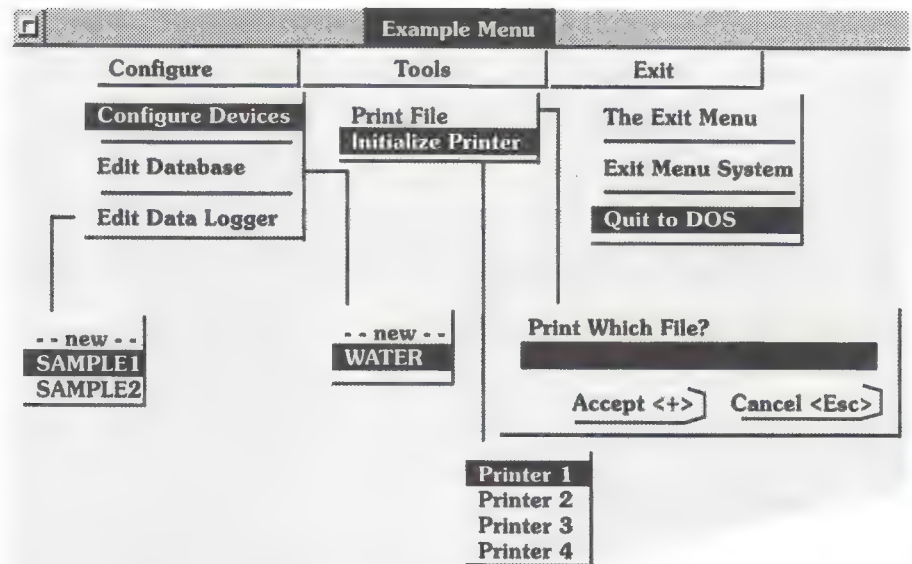
```
item text =chain display =Which Display?
```

the DISPLAY command will be checked for security access.

Menu File

Figure 6.6 is a menu example produced by a text file. Figure 6.7, Figure 6.8 and Figure 6.9 show the text file, including keywords and the order in which items must be placed to produce the menu in Figure 6.6.

Figure 6.6
Example Menu



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Figure 6.7
Example Menu Files (page 1)

```
;=====
;
;                               EXAMPLE MENU
;-----
;=====
;
;                               MENU FILE CONFIGURATION
;-----
;  Set the background color to teal (09) with the /B parameter
;  Define the word which means "new entry". All popup lists which allow for
;  new entries will have this text at the top.
;
;=====
/b9
top_of_list =--new--
;=====
;
;                               HORIZONTAL MENU DEFINITION
;-----
;  The "categories" keyword marks the start of the horizontal menu definition.
;  The text following the keyword "header" is the menu title "Example Menu".
;  The next 3 lines are the horizontal menu items.
;  The period marks the end of the horizontal menu definition.
;=====
categories
header  Example Menu
  Configure
  Tools
  Exit
;=====
```

Figure 6.8
Example Menu Files (page 2)

```

;=====
;
;           First VERTICAL MENU DEFINITION
;-----
; The "items" keyword marks the start of the first Vertical Menu Definition.
; The next lines define the items on the menu as follows.
; The blank lines each specify a separating line.
; The @LP DLP parameter definition specifies a dynamic list from the Database
;   List Processor.
; The @DIR\+ parameter definition specifies a dynamic list of filenames with
;   "--new--" at the top of the list.
; DLG_BASE_DIR is a CFG database key for the location of the Datalogger files
; The period marks the end of the first Vertical Menu Definition.
;=====
items
  Configure Devices =chain device

  Edit Database =chain database =@LP DLP 0

  Edit Data Logger =chain datalog /n =@Dir\+ DLG_BASE_DIR \access\d1 *.DLM
  .
;=====
;
;           Second VERTICAL MENU DEFINITION
;-----
; Here we define the "Print File" menu.
; The parameter definition specifies the prompt text "Print which file?"
; The @LIST parameter definition lists the options to be displayed in the list.
;=====
items
  Print File =print = Print which file?
  Initialize Printer =printinit =@LIST Printer1 Printer2 Printer3 Printer4
  .
;=====

```

Figure 6.9
Example Menu Files (page 3)

```
=====
;
;           Third VERTICAL MENU DEFINITION
;
;-----
; Here we define the "Exit" menu.
; The header keyword creates a title "The Exit Menu" in the vertical menu.
; The exitmenu keyword specifies that if "Exit Menu" is selected, the
; topleveloff command is executed then the menu system is exited.
; The blank line specifies a separating line.
; The period indicates the end of the menu.
;=====
items
header  The Exit Menu
        Exit Menu System =exitmenu topleveloff.

        Quit to DOS =quit
;=====
```

The System Documentor

How Can I Produce System Documentation?

All the System Documentor reports are listed under the *Document* menu in the Setup Menu, and can be run with a minimum of preparation. For those who prefer the command line, all menu items are also available as commands (see Appendix A). Reports are easy to configure and produce, with simple fill-in-the-blanks screens and ready-to-use default parameters.

Reports are produced as ASCII text files. You can print them and then discard them or you can save them in the directories you specify. Default file names and paths are supplied by the system, but can be changed either on a system wide basis or temporarily, one at a time.

Why Use the System Documentor?

With ControlView's System Documentor, you can examine your system's configuration without scrolling through many configuration windows.

If you are a:	You can:
systems integrator	show on paper exactly how you have set up a client's system
client	have an accurate and easy-to-read method of verifying that the system is configured as specified
systems maintenance officer	track configuration related problems and make necessary changes
new systems manager	get a complete hard copy of all the system's details, including any modifications since the system was first installed

The System Documentor provides a means of reconstructing a system that has not been properly backed up, or of duplicating all or part of a system's configuration for a new plant or process.

What Can I Document?

Using the System Documentor, you can produce up-to-the-minute comprehensive reports about each of the following areas in ControlView:

- Hardware configuration (devices, highways, printers, nodes)
- Databases (scan classes, tags, derived tags, alarms)
- Activity and data logging
- Alarming configuration
- Event detection

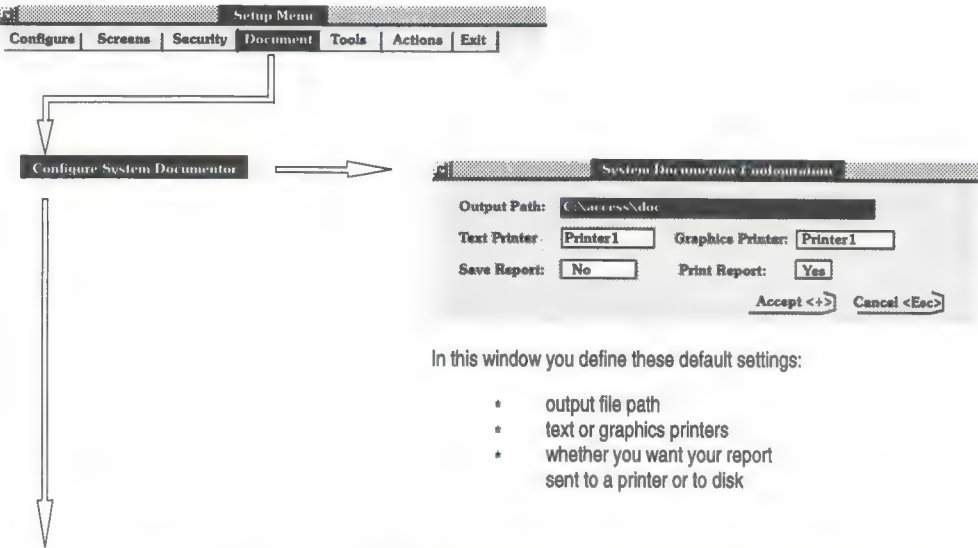
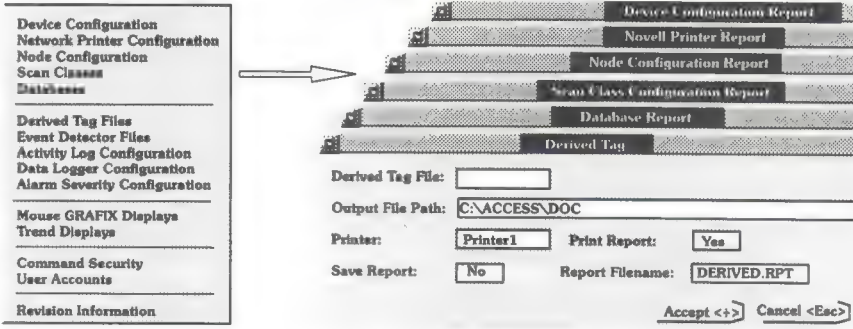
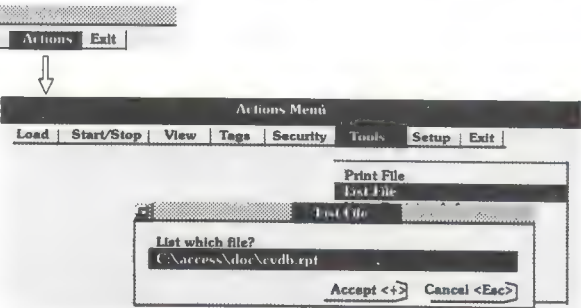
- Mouse GRAFIX™ displays
- Trending configuration
- Security and user accounts
- ControlView Core and option revision numbers

Available Reports

For this release, the following reports are available:

This Report:	Shows this Information:	When this Option is Installed:
Device Configuration	Device Configuration window entries - mouse, serial ports, Control Panel keyboards, parallel or network printers, modems, data highways, KT Adaptors.	Core - no option needed
Network Printer Configuration	All network printers defined on the Novell Printer Configuration window and its associated windows - server details, banner text and name, capture data.	Core - no option needed
Node Configuration	Node Configuration window entries for all programmable controllers configured to communicate with ControlView over the data highway(s) - names, types, addresses, status, time-out period, number of retries.	Core - no option needed
Scan Classes	Scan Class Configuration window entries - each scan class's foreground and background periods and the device classes associated with them.	Core - no option needed
Database	Database configuration - tag names, types and descriptions, analog, digital and group tag lists, and details of addresses, scale and offset, class and security access. If the Alarming option is installed, includes details of digital and analog alarm configuration for the specified database, as well as Alarm Identification commands and file/printer messages.	Core - no option needed
Derived Tag Files	Derived Tag List and Derived Tag File Editor window descriptions for the specified Derived Tag file.	Derived Tags
Event Detector Files	Event List and Event Editor window descriptions for the specified Event Detector file.	Event Detector
Activity Log Configuration	Activity Logging Configuration window entries - activity type, label, and whether the event is logged to disk, printer or both.	
Data Logger Configuration	Configuration of the specified Data Logger model - model name, description, sample rate and file information.	Data Logger
Alarm Severity Configuration	Configuration of the Alarm Severity Table - showing the attributes for each of the eight alarm severities, including alarm color and logging destinations.	Alarming
Mouse GRAFIX Displays	Configuration of the graphic control objects in the specified display, and the key commands associated with them. If a PDF (Pixel Dump File) has been generated in the Mouse GRAFIX Editor for the specified display, and if a graphics printer has been correctly configured, the report will include a picture of the display.	Mouse GRAFIX
Trend Displays	Configuration of trend, showing name, type, and description.	Trending
Command Security	Commands, macros and displays in the Secure Object Table Editor display - each object's name, the access code, and comments.	Core - no option needed
User Accounts	Security-User Account Browser display entries - each user's name, access code privileges and logon macro.	Core - no option needed
Revision Information	All installed options, with their revision numbers and dates.	Core - no option needed

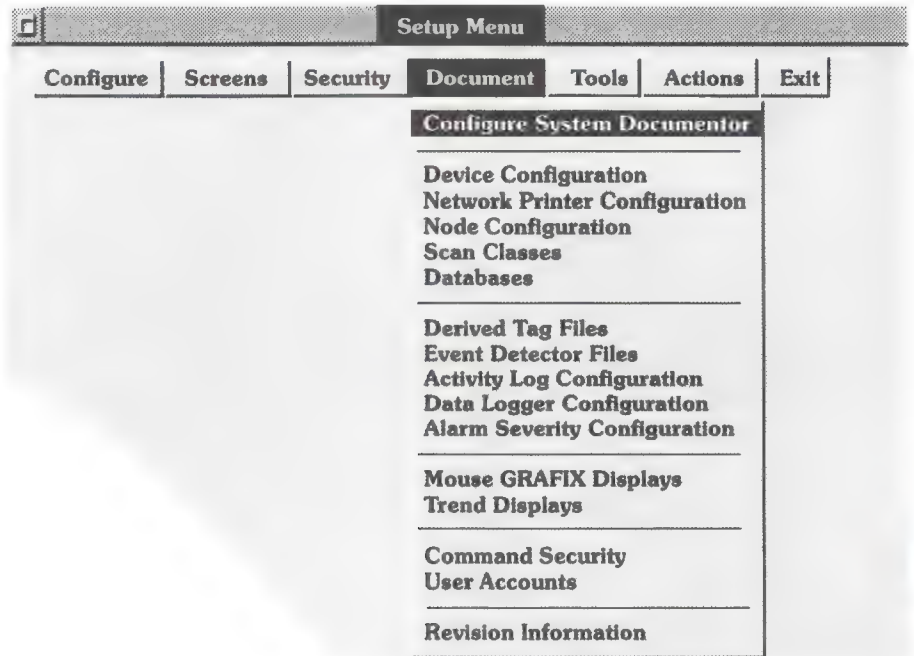
Table 7.A
The System Documentor Task Overview

Task	Menu Selection
<p>1. Configure Report Settings</p> <p>Choose this item if you want to define default report settings. If you've never used System Documentor before, start here.</p>	 <p>In this window you define these default settings:</p> <ul style="list-style-type: none"> • output file path • text or graphics printers • whether you want your report sent to a printer or to disk
<p>2. Produce a Report</p> <p>Choose this item to generate the report you want, then save it to a file.</p>	 <p>These screens, one for every report, allow you to override any default settings before you produce the report. Some screens have unique additional fields.</p>
<p>3. Print or View a Report</p> <p>Choose this item to print or view a report that is saved in a file.</p>	 <p>In this window specify the file where the file is saved.</p>

Configuring the Report Settings

To redefine the default report settings, choose *Configure System Documentor* under *Document* in the Setup Menu.

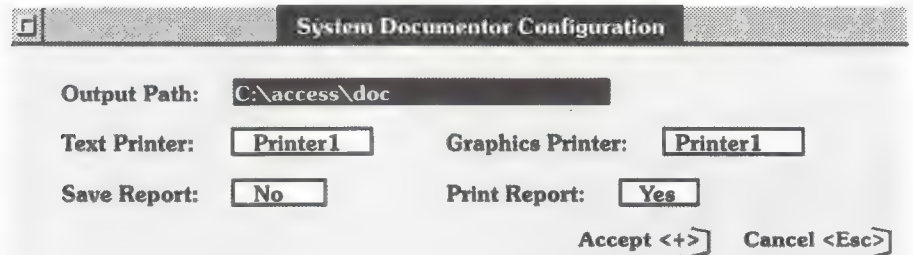
Figure 7.1
The Document Menu



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The System Documentor Configuration window is displayed.

Figure 7.2
System Documentor Configuration Window



43530

Any changes you make in this window will become the new defaults for all reports. These defaults will appear in all subsequent System Documentor report windows. You can change the settings temporarily in each report window any time you produce a System Documentor report.

The fields are:

- Output Path

To save report files in a directory other than the default C:\ACCESS\DOC for your report files, enter the correct path here.

Important: Whenever you configure a pathname, be sure to start with the drive letter. This is absolutely essential when running ControlView in a multi-drive environment.

- Text Printer

Choose a text printer, one of Printer1 through Printer4 as previously defined in the Device Configuration window.

- Graphics Printer

Choose a graphics printer, one of Printer1 through Printer4 as previously defined in the Device Configuration window.

Text Printer and *Graphics Printer* may be the same printer, if the printer can print both text and graphics.

Important: Only the Mouse GRAFIX Display report prints graphics.

- Save Report

To save your report files to disk, choose *Yes*.

- Print Report

To send your reports to the printer, choose *Yes*.

If you choose *No* for both *Save Report* and *Print Report*, you will see an error message telling you that that the choice is invalid.

To save these default settings, press the + key or use the *Accept* button.

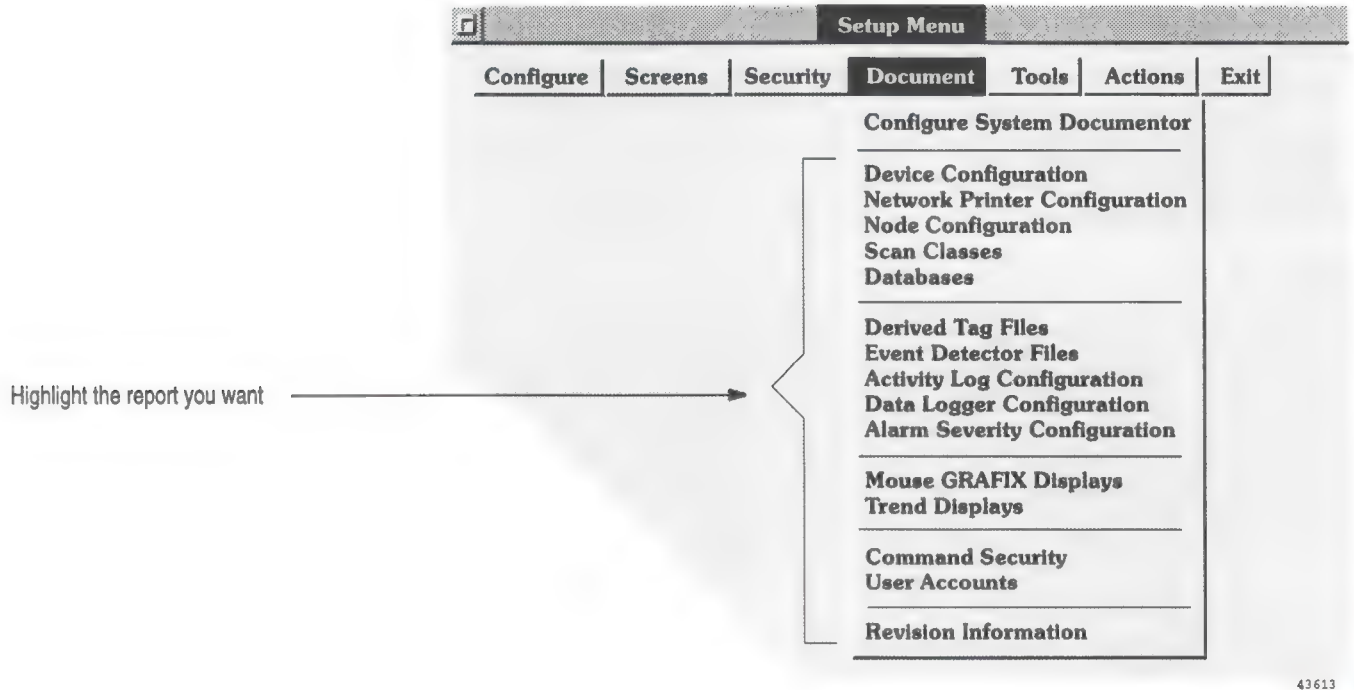
Producing a Report

To produce any report, do the following:

Important: Check that the database is loaded before you start to produce the report.

1. Choose the report you want from the Document Menu.

Figure 7.3
Document Menu



The report window is displayed.

2. To specify your requirements for this report, change any of the default values in the fields in the report window. The default values were set in the System Documentor Configuration window.
3. To produce the report, accept the entries on the screen with the *Accept* button or the + key.

The system creates the report as an ASCII text file, printing and/or saving it to disk, depending on your choices.

Example: Producing the Device Configuration Report

Choose *Device Configuration* from the *Document* menu. The Device Configuration Report window opens. The fields contain the default values from the System Documentor Configuration window plus the *Report Filename* field, in which you specify a filename. You can change any or all these field values, for this report only.

Figure 7.4
Device Configuration Report Window

Device Configuration Report

Output File Path: C:\ACCESS\DOC

Printer: Printer1 Print Report: Yes

Save Report: No Report Filename: DEVICE.RPT

Accept <+> Cancel <Esc>

42520

Here is a sample of a Device Configuration Report based on a possible ControlView configuration.

Figure 7.5
Sample Device Configuration Report

ControlView Device Configuration Report					
05-08-92 2:27:45 pm					
Device Configuration					
Serial Port	Device	Baud Rate	Data Bits	Stop Bits	Parity
IBMCOM1	MOUSE	1200	8	1	NONE
IBMCOM2	SERIAL1	19200	8	1	NONE
Printer Port	Device				
LPT1					
LPT2		Use PS/2 Auxiliary Mouse Port No			
NetLPT1	PRINTER1				
NetLPT2					
NetLPT3					
Printer Configuration					
Device: PRINTER1 Spool Size: 125 kilobytes					
Type: Hewlett Packard LaserJet III (Portrait Mode)					
Init. code:					
Device: PRINTER2 Spool Size: 125 kilobytes					
Type: B+W (ControlView Classic)					
Init. code:					
Device: PRINTER3 Spool Size: 125 kiobytes					
Type: B+W (ControlView Classic)					
Init. code:					
Device: PRINTER4 Spool Size: 125 kilobytes					
Type: B+W (ControlView Classic)					
Init. code:					
Spool Path: C:\access\TMP\					
Page 1					
Highway Configuration					
	Type	No. of Messages			
HIGHWAY1	DH/DH+	4			
HIGHWAY2					
KT Adaptor Configuration					
Adaptor	Device	Address	Terminating Resistor	Base Address	
KT1	HIGHWAY1	65	RESET	CC00	
KT2					
Page 2					

The report windows are all similar to the Device Configuration Report window.

The window for the Database Report contains several additional fields.

Example: Producing the Database Report

Choose *Databases* from the *Document* menu. You see the Database Report window.

Figure 7.6
Database Report Window

Database Report

Database: Number of columns:

Group List: Analog List: Digital List: AlarmList:

Output File Path:

Printer: Print Report:

Save Report: Report Filename:

42541

The additional fields are:

- Database

Type in the name of the database that you want to report on.

- Number of columns

Choose either 80 or 132 columns per line.

- Group List

Choose *Yes*, if you want the database report to include a list of group tags.

- Analog List

Choose *Yes*, if you want the database report to include a list of analog tags.

- Digital List

Choose *Yes*, if you want the database report to include a list of digital tags.

- Alarm List

Choose *Yes*, if you want the database report to include a list of tags with alarms.

Here is a sample report using the SALAD database from the Getting Started Disk.

Figure 7.7
Sample Database Report, Page 1

ControlView Database Report		
=====		
Database: salad	Date: 06-04-92 11:42:31 am	
Tag Name	Tag Type	Tag Description
MIXER	GROUP	
MIXER.LEVEL	ANALOG	Salad dressing mixer tank level
MIXER.MOTOR	DIGITAL	Mixer motor control
MIXER.OILIN	ANALOG	Salad mixer oil flow in
MIXER.OUTFLOW	ANALOG	Sald mixer total flowout
MIXER.RATIO	ANALOG	Mixer oil to vinegar ration
MIXER.VALVE	DIGITAL	Salad mixer tank valve
MIXER.VININ	ANALOG	Salad mixer vinegar flow in
OIL	GROUP	
OIL.LEVEL	ANALOG	Bulk salad oil level
OIL.VALVE	DIGITAL	Bulk oil tank valve
VIN	GROUP	
VIN.LEVEL	ANALOG	Bulk vinegar tank level
VIN.VALVE	DIGITAL	Bulk vinegar tank valve

Figure 7.8
Sample Database Report, Page 2

ControlView Database Report Analog Tag List									

Database: salad					Date: 10-01-92 3:56:42				
Tag Name	Node: :Address & Offset	Scale	Offset	Scan Class	Access	Minimum/ Maximum	Initial Value	Type	Units
MIXER.LEVEL		1	0		*	0 50	43	Integer	litres
MIXER.OILIN		1	0		*	0 100	30	Integer	l/min
MIXER.OUTFLOW		1	0		*	0 100	0	Integer	l/min
MIXER.RATIO		1	0		*	0 100	66	Integer	O/V
MIXER.VININ		1	0		*	0 100	36	Integer	l/min
OL.LEVEL		1	0		*	0 500	217	Integer	liters
VIN.LEVEL		1	0		*	0 500	406	Integer	litres

43659

Figure 7.9
Sample Database Report, Page 3

ControlView Database Report Digital Tag List							

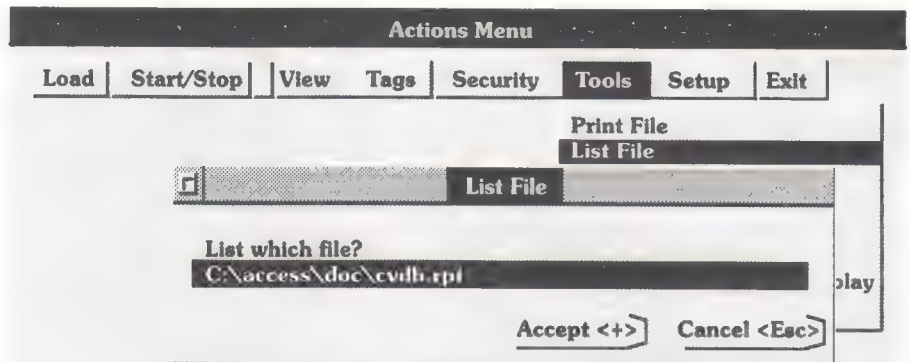
Database: salad				Date: 10-01-92 3:56:42			
Tag Name	Node: :Address & Offset	On Label	Off Label	Scan Class	Access	Initial Value	Units
MIXER.MOTOR		motor_on	motor_off		*	motor_off	
MIXER.VALVE		open	close		*	flow	
OIL.VALVE		open	close		*	flow	
VIN.VALVE		open	close		*	flow	

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Viewing or Printing a Report

To view a report that has been saved to disk, choose *List File* under Tools.

Figure 7.10
List File Window



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Type in and accept the path and filename, and the file will appear in the List/Print window.

Important: Whenever you configure a pathname, be sure to start with the drive letter. This is absolutely essential when running ControlView in a multi-drive environment.

To print a report file, choose *Print File* and follow the same steps.

The System Documentor and Related Commands

Every item in the Document menu has a command associated with it; choosing the menu item simply runs the command as if it was typed into the command line. Table 7.B lists the commands that are run when each menu item is chosen. These commands can be run from the command line, or used in macros or key definitions.

Table 7.B
The System Documentor and Related Commands

Document	
Configure System Documentor	DOCUMENTOR
Device Configuration	DEVICERPT
Network Printer Configuration	NOVRPT
Node Configuration	NODERPT
Scan Classes	CLASSRPT
Databases	DBRPT
Derived Tag Files	DERIVEDRPT
Event Detector Files	EVENTRPT
Activity Log Configuration	ACTIVITYRPT
Data Logger Configuration	DATALOGRPT
Alarm Severity Configuration	ALARMRPT
Mouse GRAFIX Displays	GRAFIXRPT
Trend Displays	TRENDRPT
Command Security	SECURITYRPT
User Accounts	ACCOUNTRPT
Revision Information	REVISIONRPT

ControlView Commands

Menu Items and Their Related Commands

Every item in the Setup menu and the Actions menu has a ControlView command associated with it. Choosing the menu item simply runs the command as if it was typed into the command line. The following tables list the commands that are run when each menu item is chosen.

Table A.A
The Setup Menu and Related Commands

Configure	
Configure Data Channel	DCCONFIG
Configure Devices	DEVICE
Configure KT	KTCONFIG
Configure Mouse	MOUSECONFIG
Configure Touchscreen	TOUCHCONFIG
Configure Printers	PRINTERCONFIG
Configure Novell Printers	NOVELL
Configure TCP/IP Printers	LPRCONFIG
Configure Phone List	MODEMDIRECTORY
Configure ControlView Nodes	NETCONFIG
Configure Nodes	NODE
Configure Scan Classes	CLASS
Edit Database	DATABASE <database>
Edit Derived Tags	DERIVED /N
Edit Event Detector	EVENT /N
Configure Activity Log	ACTIVITY
Edit Data Logger	DATALOG <model>
Configure Alarm Severity	ALARM
Edit Report Template	REPORT <template>
Screens	
Edit Mouse GRAFIX	GRAFIX <display>
Edit Trend Display	TREND <trend>
Security	
Operator Logon	HELLO
Operator Logoff	BYE
Change Password	PASSWORD
Edit Security	SECURITY
Edit User Accounts	ACCOUNT

Tools

Print File	PRINT <file>
List File	LIST <file>
View Revision Info	REVISION
Set Up List Print	LISTCONFIG
Initialize Printer	PRINTINIT <printer>
Set Up Window Removal	WINDOWCONFIG
Set Up COMSTATUS Display	CMSCONFIG
Help	HELP

Exit

Quit to DOS	QUIT
-------------	------

Table A.B
The Actions Menu and Related Commands

Load

Load Database	LOAD <database>
Unload Database	UNLOAD
Load Key Definitions	KEY <file>
Unload Key Definitions	KEY /R
Load Control Panel Keys	PANELON <file>
Unload Control Panel Keys	PANELOFF
Log onto Local Area Network	NETLOGON
Log off Local Area Network	NETLOGOFF

Start/Stop

Start Alarms	ALARMON
Stop Alarms	ALARMOFF
Start Alarm Handshake	HANDSHAKEON
Stop Alarm Handshake	HANDSHAKEOFF
Start Derived Tags	DERIVEDON <file>
Stop Derived Tags	DERIVEDOFF
Start Event Detector	EVENTON <file>
Stop Event Detector	EVENTOFF
Start Activity Logging	ACTIVITYON
Stop Activity Logging	ACTIVITYOFF
Start Data Logging	DATALOGON <model>
Stop Data Logging	DATALOGOFF <model>
Stop All Data Logging	DATALOGOFF /A

View

Display a GRAFIX screen	DISPLAY <file>
Get GRAFIX Info	DISPLAY
View Tag Status	STATUS <tag>
Display a Trend	PLOT <file>
Get Trend Info	PLOT
Get Data Logger Info	DATALOGON
View Alarm Summary	SUMMARY
View Suppressed Alarms	SUPPRESSED
Run C-Toolkit Program	RUN <task>

Tags

Set a Tag Value	SET <tag> <value>
Ramp a Tag Value	RAMP <tag> <value>
Acknowledge an Alarm	ACKNOWLEDGE <tag>
Suppress Alarms	SUPPRESSON <tag>
Stop Alarm Suppression	SUPPRESSOFF <tag>

Security

Operator Logon	HELLO
Operator Logoff	BYE
Change Password	PASSWORD

Document

Configure System Documentor	DOCUMENTOR
Device Configuration	DEVICERPT
Network Printer Configuration	NOVRPT
Node Configuration	NODERPT
Scan Classes	CLASSRPT
Databases	DBRPT
Derived Tag Files	DERIVEDRPT
Event Detector Files	EVENTRPT
Activity Log Configuration	ACTIVITYRPT
Data Logger Configuration	DATALOGRPT
Alarm Severity Configuration	ALARMRPT
Mouse GRAFIX Displays	GRAFIXRPT
Trend Displays	TRENDRPT
Command Security	SECURITYRPT
User Accounts	ACCOUNTRPT
Revision Information	REVISIONRPT

Tools

Print File	PRINT <file>
List File	LIST <file>
List Activity Log	LIST @ACTIVITY
Capture Novell Printer	CAPTURE
Capture TCP/IP Printer	LPRCAPTURE
Dial Modem	DIAL
Hangup Modem	HANGUP
Help	HELP
Generate Report	REPORTON <template>
Stop Report	REPORTOFF <template>
Archive Files	ARCHIVE <source> <destination>
Restore Files	RESTORE <source> <destination>
Network File Transfer	REMCOPY <source> <destination>
Enter a Remark	REMARK <comment>
Export Data Logger Data	DATALOGEXPORT
Local Area Network Status	NETDIAG
Communication Status	COMSTATUS <options>
Modem Status	MODEMSTATUS
A-B Highway Diagnostics	ABDIAG

Exit

Quit to DOS	QUIT
-------------	------

ABORT

ABORT [*application*]

Terminates one or more applications on the screen.

<application> is a ControlView application that is currently running.
* all applications that are currently running in ControlView.

Important: C-Toolkit programs will also be terminated unless the CTK_STAY_RESIDENT() function is included in your C-Toolkit program. Refer to the *C-Toolkit User Manual* for details.

Examples: The ABORT Command

ABORT

without a parameter, terminates the current application.

ABORT DISPLAY

terminates all Mouse GRAFIX Displays on the screen.

ABORT *

terminates all foreground applications.

ACCOUNT

ACCOUNT

Displays the User Account window, where each user is assigned a password, logon macro, logoff macro and security privileges.

ACCOUNTRPT

ACCOUNTRPT

Opens the Security Account Report window. From this window, you can produce an ASCII file report which describes the current configuration of the security accounts.

ACTIVITY

ACTIVITY

Displays the Activity Logger Configuration window, where the Activity Log file set attributes are defined.

ACTIVITYCLR

ACTIVITYCLR

Erases the current contents of the Activity Log files, so that logging continues, starting with a blank Activity Log. This command can be used when Activity Logging is on or off.

ACTIVITYOFF

ACTIVITYOFF

Stops the Activity Logger from saving system activity to the Activity Log files then closes the log files.

ACTIVITYON

ACTIVITYON

Starts the Activity Logger, which saves system activity to the Activity Log files.

ACTIVITYRPT

ACTIVITYRPT

Opens the Activity Log Report window. From this window, you can produce an ASCII file report, which describes the current configuration of the Activity Log.

ALARMRPT

ALARMRPT

Opens the Alarm Configuration Report window. From this window you can produce an ASCII file report on the configuration of alarm severity.

ARCHIVE

ARCHIVE <source> <destination> [options]

Copies the specified files or file set to the destination drive.

<source> is the name of the file or file set to be archived.
To archive file sets, use the following key words:
@alarm
to archive the Alarm History Log file set
@activity
to archive the Activity Log file set
@<model_name>
to archive the Data Logger file set created by the specified model

You can also use ARCHIVE for DOS files. Specify the file and path name. You can use the DOS ? and * wildcards.

<i><destination></i>	is the name of the drive and directory where the backup files are to be written.
<i>[options]</i>	for standard backup procedures, you won't need to use any of the following options:
<i>/all</i>	use this option to specify that all the files specified should be archived, even if they have been archived before. Without this parameter, only those files that haven't been archived in the past will be archived.
<i>/nocatalog</i>	use this option so that no catalog is created for the archive operation. Without this parameter, a file (named according to the current date and with a .CAT file extension, like this: YYMMDD.CAT) is created to record the archive procedure.
<i>/catalog=filename.[ext]</i>	use this option to specify a different name for the catalog.
<i>/noset</i>	the destination files have their archive bits set by default; <i>/noset</i> prevents this. You would only want to use this option if you are archiving to a file server and don't want the archived file backed up from the server.
<i>/noclear</i>	use this option if you don't want the file's status to indicate that the archive process has taken place. Use this parameter when you plan on making multiple copies of the same archived files.
<i>/fast</i>	use this option only when ControlView is not actively monitoring or controlling the plant. Specifying <i>/fast</i> will speed up the archive process at the expense of overall system performance.
<i>/noid</i>	the id file is used to restore archived files that are split over multiple disks. Use the <i>/noid</i> option if you don't want the id file; for example, if you are archiving an exact copy of a directory, or if all the files fit on one disk. You can combine the <i>/noid</i> option with the <i>/nocatalog</i> option to conserve disk space. You shouldn't use this option with file sets, because the id file will be needed to reassemble the set.
<i>/overwrite</i>	use this option to automatically overwrite files at the destination. Otherwise, if the destination is not empty, ControlView won't archive the files.

/verify use this option when archiving critical data. /verify will cause ControlView to check that each file has been correctly written at the destination, but will slow down the archive process.

BEEP

BEEP [*frequency*], [*duration*], [*wait*], [*repeat*]

Generates a tone on your computer's speaker. The commas are mandatory, even if a given parameter is left out.

[<i>frequency</i>]	is a value from 19 – 65535 Hertz. Values greater than about 18000 Hertz are not audible. The default is 330 Hertz.
[<i>duration</i>]	is the length of the tone, in units of 1/3 of a second. The default is 1 (i.e. 1/3 of a second).
[<i>wait</i>]	is the length of time to wait between beeps, in units of 1/10 of a second. The default is 0.
[<i>repeat</i>]	is the number of times to repeat the tone, after the first one. The default is 0.

Examples: The BEEP Command

BEEP 1000,9,40,5

generates six 1000 Hz tones that last 3 seconds each, with 4 seconds of silence between each one.

BEEP , , 30, 1

generates two 330 Hz (default frequency) tones that last 1/3 second (default duration) with 3 seconds of silence between each one.

BEEPOFF

BEEPOFF

Prevents the system from beeping when there is a system error.

The default is OFF.

BEEPON

BEEPON

Causes the system to beep when a system error occurs.

BYE

BYE

Signs the current user off the system.

CAPTURE

CAPTURE [options]

Allows you to capture the printers on the Novell network, or to view the Novell printer configuration. The optional parameters specify which printers are to be used for printing:

- /a captures all printers defined in the Novell Printer Configuration window
- /n captures only one printer, NetLPTn (NetLPT1, NetLPT2 or NetLPT3 as defined in the device, printer and Novell printer configuration windows).

If no parameters are used, a window pops up showing the printer configuration. You can start or stop any printer from this window.

CHAIN

CHAIN <command>

Saves all foreground applications, clears the screen and executes the specified command. When the operator presses **Esc**, the current application terminates and the saved applications are restored to the screen at their default locations as follows:

- Windows positioned using the command line position parameters are redisplayed in the location specified by the position parameters.
- All other windows, including those that were repositioned manually using the mouse or the **Alt-M** key, are redisplayed in their initial positions.

Up to 16 chains can be executed in a row. When the limit is reached, the next display overwrites the oldest display in the chain stack without notifying the user.

Important: C-Toolkit programs will also be aborted by the CHAIN command unless the CTK_STAY_RESIDENT() function is in your C-Toolkit program. Refer to the *C-Toolkit User Manual* for details.

Important: Be sure that all commands in your chain stack are valid ones. If the CHAIN command finds an invalid command, you will not be able to move back through the chain. Do not use the CHAIN command when the Application Window is running.

Example: The CHAIN Command

The screen has three windows on it.

When you type the command

CHAIN list @activity

the three applications are replaced with the List/Print Service window.

When you type the command

CHAIN status tagx

the List/Print Service window disappears and the Status window appears.

Pressing **Esc** clears the Status window, restoring the List/Print Service window. Pressing **Esc** again, clears the List/Print Service window, restoring the original three applications. Up to 16 screens may be saved using CHAIN.

CHAINCLR

CHAINCLR

Clears all chained applications from the chain stack. This allows you to return immediately to your toplevel.

CLASS

CLASS [*options*]

Opens the scan class definition table.

The [*options*] are:

- | | |
|--------------|---|
| <i>/Xnnn</i> | Positions the Class window at <i>nnn</i> pixels from the left edge of the screen. The screen width is 640 pixels. |
| <i>/Ynnn</i> | Positions the Class window at <i>nnn</i> pixels from the top of the screen. The screen height is 350 pixels. |

CLASSRPT

CLASSRPT

Opens the Scan Class Configuration Report window. From this window, you can produce an ASCII file report, which describes the current configuration of scan classes.

CLOCK

CLOCK [*options*]

Displays an analog clock on the screen.

The [*options*] are:

<i>/Xnnn</i>	Positions the clock display window at <i>nnn</i> pixels from the left edge of the screen. The screen width is 640 pixels.																
<i>/Ynnn</i>	Positions the clock display window at <i>nnn</i> pixels from the top edge of the screen. The screen height is 350 pixels.																
<i>/Fnn</i>	Sets the foreground color of the text in the clock display window, where values for <i>nn</i> are: <table> <tr> <td>00 = black</td><td>08 = navy</td></tr> <tr> <td>01 = blue</td><td>09 = teal</td></tr> <tr> <td>02 = green</td><td>10 = blue (blink)</td></tr> <tr> <td>03 = cyan</td><td>11 = orange</td></tr> <tr> <td>04 = red</td><td>12 = red (blink)</td></tr> <tr> <td>05 = magenta</td><td>13 = grey</td></tr> <tr> <td>06 = yellow</td><td>14 = yellow (blink)</td></tr> <tr> <td>07 = white</td><td>15 = brown</td></tr> </table>	00 = black	08 = navy	01 = blue	09 = teal	02 = green	10 = blue (blink)	03 = cyan	11 = orange	04 = red	12 = red (blink)	05 = magenta	13 = grey	06 = yellow	14 = yellow (blink)	07 = white	15 = brown
00 = black	08 = navy																
01 = blue	09 = teal																
02 = green	10 = blue (blink)																
03 = cyan	11 = orange																
04 = red	12 = red (blink)																
05 = magenta	13 = grey																
06 = yellow	14 = yellow (blink)																
07 = white	15 = brown																
<i>/Bnn</i>	Sets the background color of the clock display window, where values for <i>nn</i> are as in <i>/F</i> above.																
<i>/Hnn</i>	Sets the color of the clock hands, where values for <i>nn</i> are as in <i>/F</i> above.																
<i>/Wnnn</i>	Sets the clock's width to <i>nnn</i> pixels. Range is 50 to 360.																

The */X* and */Y* coordinates are adjusted so that the clock always appears on the screen.

If no parameters are used, **CLOCK** toggles the clock display on and off.

Examples: The CLOCK Command

CLOCK

with no parameters, toggles the clock display on and off.

CLOCK /X640 /Y350 /F8 /B13 /H11

displays a grey clock, with blue markings and orange hands in the bottom right corner of the screen.

CMSCONFIG

CMSCONFIG [*options*]

Configures the Communication Status window (displayed via the COMSTATUS command). The configuration specified is used in the current ControlView session and is also saved for future sessions.

The [*options*] are:

- | | |
|--------------|--|
| /Xnnn | Positions the Communication Status window at <i>nnn</i> pixels from the left edge of the screen. The screen width is 640 pixels. |
| /Ynnn | Positions the Communication Status window at <i>nnn</i> pixels from the top edge of the screen. The screen height is 350 pixels. |

COMSTATUS

COMSTATUS [*format*]

Activates or deactivates the Communication Status window and sets its display format. The Communication Status window displays the current status of all communication networks.

The [*format*] is one of the following:

- | | |
|----------------|---|
| STATION | The Communication Status window displays the station number of the PLC that the system is communicating with. |
|----------------|---|

MESSAGES The Communication Status window displays the number of messages waiting in the buffer. This number rises with the communications load on the network, and data update performance slows accordingly. This is the result of several factors, including:

- volume of communications being attempted
- volume of other traffic on the network
- efficiency of the database organization
- efficiency of communications interface modules

RESET Resets the indicators for all channels to the “normal” non-error colors.

You can abbreviate the *[format]* to the first three letters: STA, MES, and RES. The format is saved for use in future ControlView sessions.

If no *[format]* option is specified, the COMSTATUS command behaves as follows:

- If the Communication Status window is active, it is deactivated.
- If the Communication Status window is *not* active, it is activated using the configuration set with the CMSCONFIG command. If the CMSCONFIG command has not been run, a default configuration is used.

DATABASE

DATABASE *[database]*

Opens the Database Editor.

[database] is the name of the database to edit. If no database is specified, the Database Editor will start up at the Database Setup menu.

DATALOGRPT

DATALOGRPT *[model]*

Opens the Data Logger Report window. From this window, you can produce an ASCII file report on the configuration of the Data Logger model named.

[model] is the name of a Data Logger model. If not specified, the model name will have to be entered in the appropriate field in the window.

DBEXP

DBEXP <database><output file>[/s] [/c] [/dx] [/o]

Exports a database and alarm information to ASCII files.

- <database> is the name of the database to be exported.
- <output file> is the name of the file to export the database information to. The default extension for the tag data file is .DBS; the default for the alarm file is .ALM.
- /s indicates that separate files are to be created for group tags, analog tags, digital tags, string tags, structure tags, structure analog tag members, structure digital tag members and structure string tag members.
- You cannot import these files unless you combine them into one ASCII file, in the correct sequence. See Appendix C, *Database Import/Export*.
- /c indicates that the exported data will be placed in column format that can be read by other programs like dBASE and Lotus 123. If you use /c, you cannot re-import the file.
- /dx indicates that the fields in the exported files are to be separated by a character rather than by white space. x specifies the character to be used. If you use /dx, you cannot re-import the file.
- /o exports data in reverse alphabetical order. Use this option if you plan on re-importing the data back into ControlView; having it in reverse alphabetical order will significantly speed up importing.

DBIMP

DBIMP <database> DBS200 <taginfo> [ALM200 <alminfo>]

Imports an ASCII file as a database.

- <database> is the name (without path) of the database to be created.
- <taginfo> is the name of the file containing the tag information to be imported. The name may include a path.
- <alminfo> is the name of the file containing the alarm data to be imported. This name may include a path.

DBRPT

DBRPT [*database*]

Opens the Database Report window. From this window, you can produce an ASCII file report, which describes the configuration of a specified database. The database need not be currently loaded.

[*database*] is the name of the database to be documented.

DCCONFIG

DCCONFIG

Opens the Data Channel Configuration window.

DEFINE

DEFINE <*symbol*> [*string*]

Creates a symbol. A symbol is a short form for a command or a command with parameters.

Symbol definitions are valid only during the current session; they must be re-defined when ControlView is restarted. Symbols are normally defined in the startup macro or login macro.

<*symbol*> is the abbreviated command that can be entered in the Command Line. The symbol cannot contain spaces.

[*string*] an existing command with or without parameters. May contain spaces and other symbols. Omitting the [*string*] parameter deletes the symbol definition.

The DEFINE command typed in the Command Line cannot exceed the length of the window; in a macro, the command, symbol and string combined can be up to eighty characters long.

Examples: The DEFINE Command

DEFINE di display

creates a symbol *DI* for the command DISPLAY. Typing *DI* as a command in any valid command syntax will have the same effect as typing DISPLAY. The new symbol, *DI*, can even be used in another symbol.

DEFINE show di overview /cc

displays the Mouse GRAFIX display called *overview* in the center of the screen whenever the SHOW command is issued.

DERIVEDRPT

DERIVEDRPT [*filename*]

Opens the Derived Tag Report window. From this window, you can produce an ASCII file report on the configuration of derived tags in the derived tag file named.

[*filename*] is the name of a derived tags file. If not specified, the filename will have to be entered in the appropriate field in the window.

DEVICE

DEVICE

Displays the Device Configuration window.

DEVICERPT

DEVICERPT

Opens the Device Configuration Report window. From this window, you can produce an ASCII file report which describes the current system device configuration.

DIAL

DIAL <*modem*> <*name*>

Dials a phone number on the specified modem. The name is a phone number defined using the MODEMDIRECTORY command. If the phone number entry has commands or macros associated with success/failure or hangup, these commands will be executed when the call is completed. If the link is already connected when a dial is issued, an error will be reported.

[*modem*] specifies the modem to be used (Modem1, Modem2, etc. as defined in the Modem Configuration window). If this is omitted, a list of available modems pops up.

<*name*> specifies a phone number defined by the MODEMDIRECTORY command.

If <*modem*> or <*name*> are omitted, the operator is prompted for the missing information.

DISPLAY

DISPLAY [/U] [*file*] [*tags*] [*size*] [/S] [*position*] [/O]

Calls up a Mouse GRAFIX display.

/U	automatically updates tag values into all data entry fields in the display once, when the display is first brought up.						
[<i>file</i>]	is the name of the Mouse GRAFIX display.						
[<i>tags</i>]	can be one of two things: <ul style="list-style-type: none"> /T followed by a list of tags to be substituted into the display /P followed by the name of the file that contains tag names to be substituted into the display <p>If the display file contains no “placeholders”, the [<i>tags</i>] parameter is not necessary.</p>						
[<i>size</i>]	can be one or both of the following: <ul style="list-style-type: none"> /H<i>nnn</i> sets height of window to <i>nnn</i> pixels. The screen height is 350 pixels. /W<i>nnn</i> sets width of window to <i>nnn</i> pixels. The screen width is 640 pixels. 						
/S	(silences) prevents the display of any warning message, if the window clips an object.						
[<i>position</i>]	specifies the position of the window as follows: <ul style="list-style-type: none"> /q1 top right corner /q2 top left corner /q3 bottom left corner /q4 bottom right corner /ct centered in the top half /cb centered in the bottom half /cl centered on the left side /cr centered on the right side /cc centered in the screen /x<i>nnn</i> <i>nnn</i> pixels left from the edge /y<i>nnn</i> <i>nnn</i> pixels down from the top <p>The position parameter is optional; the following defaults are used:</p> <table> <tr> <td>half-sized window (vertical)</td><td>left half (/cl)</td></tr> <tr> <td>half-sized window (horizontal)</td><td>top half (/ct)</td></tr> <tr> <td>quarter-sized window</td><td>top left (/q2)</td></tr> </table>	half-sized window (vertical)	left half (/cl)	half-sized window (horizontal)	top half (/ct)	quarter-sized window	top left (/q2)
half-sized window (vertical)	left half (/cl)						
half-sized window (horizontal)	top half (/ct)						
quarter-sized window	top left (/q2)						
/O	(overrides) prevents the Enter key from displaying the Key Command Menu for the selected object. (This allows the Enter key to be defined for a different function.)						

Examples: The DISPLAY Command

Assume that *SAMPLE* is a quarter size display and *PICTURE* is a horizontal half size display.

DISPLAY

with no parameters, loads the Display File Browser.

DISPLAY sample

positions the quarter size Mouse GRAFIX display called *sample* in the top left corner of the screen.

DISPLAY picture /ptags /cb

positions the horizontal half size display called *picture* in the bottom half of the screen, using the file *tags* to substitute tag names.

DISPLAY picture /h300 /w400 /s /cc /o

positions the top left hand portion (measuring 300 x 400 pixels) of the display called *picture* in the center of the screen, without displaying any warning messages, and disables the **Enter** key.

DOCUMENTOR

DOCUMENTOR

Opens the System Documentor Configuration window, where default parameters for the System Documentor reports are defined.

ECHOOFF

ECHOOFF

Stops the logging of commands to the Activity Log file. You can use this command from the command line, or include it at the beginning of a macro.

ECHOON

ECHOON

Restores logging to normal after an ECHOOFF command.

EVENTRPT

EVENTRPT [*filename*]

Opens the Event Detector Report window. From this window, you can produce an ASCII file report on an Event Detector file.

[*filename*] is the name of an Event Detector file. If not specified, the filename will have to be entered in the appropriate field in the window.

GRAFIXRPT

GRAFIXRPT [*filename*]

Opens the Mouse GRAFIX Report window. From this window, you can produce an ASCII file report on the configuration of the graphic control objects and key definitions for a GRAFIX display.

[*filename*] is the name of a Mouse GRAFIX display file. If not specified, the filename will have to be entered in the appropriate field in the window.

HANGUP

HANGUP <*modem*>

Hangs up the specified modem.

[*modem*] specifies the modem to be used (Modem1, Modem2, etc. as defined in the Modem Configuration window). If this is omitted, a list of available modems pops up.

If <*modem*> is missing, a popup list of modems is displayed to prompt input. No error is reported if the link is already hung up.

If a hangup command or macro is associated with the link, this command will *not* be executed.

HELLO

HELLO [*username*] [*password*]

Allows a user to sign onto the system. There must already be an account in the User Account Setup table. If only one parameter is specified, ControlView assumes it is the [*username*]. If no parameters are specified, the logon window pops up.

[*username*] is the user's name as defined in the User Account Setup table.

[*password*] is the user's password as defined in the User Account Setup table. If the [*password*] parameter is omitted, a window pops up prompting the user to enter the password.

HELP

HELP [*command*]

Displays help on a specific command.

[*command*] can be one of two things:

the name of a command for which help information is required.

[**help**] to get help information about the command or Mouse GRAFIX display that is currently selected in ControlView.

Important: The square brackets in the [**help**] parameter are required.

There are three uses for the **HELP** command:

- to find help on a command
- to find help for the currently selected application
- to customize the help screens for your own application. See Chapter 6, *Customizing the System* for more detailed information.

Examples: The HELP Command

HELP

displays a menu-driven list of topics.

HELP ramp

displays help on the RAMP command.

HELP help

displays help on the HELP command.

HELP [help]

If the currently selected application is a STATUS display, this command will display help on the STATUS command. If the currently selected application is a Mouse GRAFIX display called “overview”, this command will display a user-created help file called “overview.hlp”.

KEY

KEY [/o] <key_file>

Loads a Global Key Definition file.

/o overrides the key definition safety-check and allows old key definition files to run without modification. It allows some important keys to be redefined, such as **Enter**, **Esc** and **+**, and should be used with caution.

<key_file> is the name of the Key Definition file. The file is located in the \ACCESS\KEY directory and must have the ".KEY" file extension.

If you load more than one file, then the key definitions are cumulative: so long as there are no conflicts, all the definitions stay in effect. If there are conflicts, the definitions from the most recently loaded file prevail.

Type the command:

KEY /R
to clear all the definitions.

See Chapter 6, *Customizing the System* for more detailed information.

KTCONFIG

KTCONFIG [options]

Calls up the KT Adaptor Configuration window, in which you configure the optional KT Adapter.

The [options] are:

/Xnnn Positions the KTCONFIG window *nnn* pixels from the left edge of the screen. The screen width is 640 pixels.

/Ynnn Positions the KTCONFIG window *nnn* pixels from the top of the screen. The screen height is 350 pixels.

LIST

LIST <file> [/pn]

Displays the contents of a text file or file set on the screen. You can search the file for specific text strings and can print all or part of the file.

<file> is one of the following:

the complete path name of a text file.

the name of a file set, preceded by the @ character. Use @ACTIVITY to list the Activity Log file set or @ALARM to list the alarming option's file set.

[/pn] specifies one of the four printers (/p1 for Printer1, /p2 for Printer2, etc). This printer will be used if you print from within the List window instead of the default printer defined with LISTCONFIG

Examples: The LIST Command

LIST \access\log\activity.000

lists the contents of the the first file in the Activity Log file set.

LIST @activity /p2

lists the complete set of Activity Log files. The file set will usually have more than one file. The entire file set will be displayed as if all the files were merged into one file. If you print all or a part of this file set, it will print on Printer2, regardless of how LISTCONFIG was defined.

LISTCONFIG

LISTCONFIG

Displays the List/Print configuration window.

LOAD

LOAD [/i] [database]

Loads the specified database.

/i initializes all tags in the Current Value Database (CVD) to the initial values specified in the database editor, when the database loads. The default is that only local tags are initialized at the moment of loading. In this case, the loading of the database will take longer.

[database] specifies the database to load. If none is specified, a list of databases is displayed.

The message:

Loading database

appears on the screen, and remains until the database is completely loaded from disk. New or modified databases take longer to load than previously loaded databases.

The Current Value Database (CVD) becomes active as soon as the load is complete, allowing any application to read or write tag values to the CVD.

To change the currently loaded database, issue another LOAD command. The first database will be removed from memory, and replaced with the new one. Note that the first database can't be unloaded if there are applications using it.

Examples: The LOAD Command

LIST /i SALAD

loads the "SALAD" database and initializes all tags.

LPRCANCEl

LPRCANCEl [*configuration-name*]

Cancels the capture of a TCP/IP printer configuration.

[*configuration-name*] is the name of a TCP/IP printer configuration defined on the TCP/IP Printer Configuration window.

If no parameters are used, the TCP/IP Printer Capture window is displayed, so that you can cancel a capture.

LPRCAPTURE

LPRCAPTURE [*configuration-name*] [/n]

Captures a TCP/IP printer configuration on a specified printer.

[*configuration-name*] is the name of a TCP/IP printer configuration defined on the TCP/IP Printer Configuration window.

/n specifies *Printer_n* (in the range Printer1 to Printer4 as defined in the printer and TCP/IP printer configuration windows). (If omitted, the printer configured for the *configuration-name* is used.)

If no parameters are used, the TCP/IP Printer Capture window is displayed.

LPRCONFIG

LPRCONFIG

Displays the TCP/IP Printer Configuration window.

MACRO

MACRO [*directory*]

Specifies the disk directory where macro files reside. This setting is stored and will be active each time you start up the system.

[*directory*] is any valid DOS path name. If [*directory*] is omitted, the directory is reset to the default: C:\ACCESS\MCR, where C is the drive where ControlView is installed.

Important: Whenever you configure a pathname, be sure to start with the drive letter. This is absolutely essential when running ControlView in a multi-drive environment.

Example: The MACRO Command

MACRO D:\access\usermcr

tells the system to look in the D:\ACCESS\USERMCR directory for all macros.

MENU

MENU [*file*]

Displays a menu or menu bar across the top of the screen.

[*file*] is the name of the menu file. If no [*file*] is specified, ControlView loads the menu file called DEFAULT.

ControlView is shipped with two menus: SETUP and ACTION. You can create your own menu files. See Chapter 6, *Customizing the System* for more detailed information.

MENUBAR

MENUBAR

Toggles ControlView between menu mode and menubar mode.

When ControlView is in menubar mode, the MENU command displays a menu bar across the top of the screen, instead of a full grey menu screen. This saves video memory and allows menus to be displayed above graphic displays.

The menu system must be restarted for the MENUBAR change to take effect. To see the change, choose *Exit Menu System* from the Exit menu and then enter the MENU command.

ControlView starts up in the menu mode that was active when it shut down.

MODEMCOMMAND

MODEMCOMMAND *<modem>* *<string>* [*string*] [*string*]...

Transmits modem commands to the specified modem. The commands are specified by strings, that have already been defined using the MODEMSTRING command or phone numbers defined using the MODEMDIRECTORY command.

- | | |
|-----------------------|--|
| <i>[modem]</i> | specifies the modem to be used (Modem1, Modem2, etc. as defined in the Modem Configuration window). If this is omitted, a list of available modems pops up. |
| <i><string></i> | specifies one of the following: <ul style="list-style-type: none"> – a string defined by the MODEMSTRING command – a name defined by the MODEMDIRECTORY command to specify a phone number More than one string may be specified. |

Examples: The MODEMCOMMAND Command

MODEMCOMMAND MODEM1 INIT DIAL PLANT2

sends to MODEM1 the command ATZ ATL1 DP 9, 1-604-555-2633 where:

- | | |
|--------|--|
| INIT | is the name of the string ATZ (see MODEMSTRING) |
| DIAL | is the name of the string ATL1 DP 9, (see MODEMSTRING) |
| PLANT2 | is an entry in the Modem Phone Directory with the number 1-604-555-2633 (see MODEMDIRECTORY) |
-

MODEMDIRECTORY

MODEMDIRECTORY

Displays the Phone Number Directory which is an alphabetical listing of names with their associated phone numbers. The operator can add, modify or delete entries in this table.

MODEMSETUP

MODEMSETUP [*modem*]

Enables the operator to change such characteristics as answer, hangup, timeout period and dial prefix for the specified modem.

[*modem*] specifies the modem to be configured (Modem1, Modem2, etc. as defined in the Modem Configuration window). If this is omitted, a list of available modems pops up.

MODEMSTATUS

MODEMSTATUS

Displays a window which shows whether hardware signals are “Active” or “Inactive” and whether each communication link is “Up” or “Down”.

Modems that are not configured have blank fields. The window is updated every second.

MODEMSTRING

MODEMSTRING

Enables the operator to define strings to use in the MODEMCOMMAND command. MODEMSTRING displays an alphabetical list of string names along with their associated commands. String names must start with a letter and have no imbedded spaces.

The commands in the list will typically consist of AT commands specific to the modem in use. There is no validation of the strings that are defined in the list.

MOUSECONFIG

MOUSECONFIG [*options*]

Opens the Mouse Configuration window, from which the mouse color, resolution, and left/right-handed attributes may be configured.

The [*options*] are:

/X*nnn* Positions the Mouse Configuration window “*nnn*” pixels from the left edge of the screen. The screen width is 640 pixels.

/Y*nnn* Positions the Mouse Configuration window “*nnn*” pixels from the top edge of the screen. The screen height is 350 pixels.

NODE

NODE

Opens the Node definition table.

NODERPT

NODERPT

Opens the Node Definition Configuration Report window. From this window, you can produce an ASCII file report which describes all nodes (programmable controllers) currently communicating with ControlView via the communication network (data highway).

NOVELL

NOVELL

Displays the Novell Printer Configuration window.

NOVRPT

NOVRPT

Opens the Novell Network Printer Report window. From this window, you can produce an ASCII file report which describes the Novell printer configuration parameters for network printers NetLPT1, NetLPT2 and NetLPT3 (as defined on the device, printer and Novell printer configuration windows).

PANELOFF

PANELOFF [/n]

Deactivates a key configuration setting for the Allen–Bradley CP14 Control Panel.

[/n] is 1 or 2, corresponding to PANEL1 or PANEL2 in the Device Configuration window. If nothing is specified, PANEL1's key definitions are removed.

PANELON

PANELON [file] [/n]

Activates a key configuration file for the Allen–Bradley CP14 Control Panel. Key configuration files associate ControlView commands, symbols, and macros to keyboard keys.

[file] is the name of the Control Panel Key file, without the path or extension characters. If no filename is provided, the default filename PANEL.CP is loaded.

[/n] is 1 or 2, corresponding to PANEL1 or PANEL2 in the Device configuration. If nothing is specified, PANEL1 is assigned the key definitions.

PASSWORD

PASSWORD

Allows the user to change their password. A window pops up prompting the user to enter their old password, and then the new password. The user must already be logged on.

POSITION

POSITION [*position*]

Highlights the item at the specified position in the Key Command list of a Mouse GRAFIX display.

[*position*] is the position number in the Key Command List (1 to 50).

If [*position*] is omitted, the default value of 1 is used.

PRINT

PRINT <*file*> [/P*n*]

Prints a text (*not* graphics) file or file set.

The <*file*> is either:

- the complete path and file name of a text file.
- the name of a file set, preceded by the @ character. Use @ACTIVITY to list the Activity Log file set or @ALARM to list the alarming option's file set.

/P*n* specifies one of the four printers defined in the device and printer configuration windows (/P1 for Printer1, /P2 for Printer2, etc). This printer will be used instead of the default printer defined with LISTCONFIG

Important: PRINT only sends line-feeds at the end of each line of text. It does not send carriage returns. If you find each new line being printed directly below the end of the previous line, configure your printer to accept line-feeds only.

Examples: The PRINT Command

PRINT \access\log\activity.000

prints the contents of the the first file in the Activity Log file set.

PRINT @activity /p2

prints the complete set of Activity Log files. The file set will usually have more than one file. The entire file set is printed as if all the files were merged into one. The file set is printed to Printer2, regardless of which printer was specified in LISTCONFIG.

PRINTERCONFIG

PRINTERCONFIG

Opens the Printer Configuration Editor window.

PRINTINIT

PRINTINIT <printer> [printer] [printer] [printer]

Sends the initialization code to the printer. The initialization code is defined in the ConfigurePrinter window. Up to four printers can be specified in the command.

<printer> specifies the name (Printer1, Printer2, Printer3 or Printer4 - as defined in the device and printer configuration windows) of the printer to initialize.

Example: The PRINTINIT Command

An Epson printer is defined in the Device Configuration window as PRINTER2. The initialization code is 27 15 . This code sets the printer to condensed mode so that it can print 132 columns.

The command:

PRINTINIT PRINTER2

places the printer in condensed mode.

QUIT

QUIT

Quits ControlView, stopping all applications, and returns to DOS.

RAMP

RAMP [*options*] <*tag*> <*value*>

Increases or decreases the value of a tag. Use the RAMP command only with analog tags.

The [*options*] are:

/s Silence all error messages (such as "Write Failure").

/v Perform read-back Verify on the write.

Normally, the system always waits for an ACK (acknowledge) from the local communications module (e.g. 1770-KF2), to determine if a write has passed. This is sufficient verification of writes in most cases.

The /v option provides an extra level of security by performing a read immediately after the write to verify that the value was actually altered in the PLC.

This option is useful if the communications network is in poor condition, or susceptible to noise interference.

Use this option only if it is certain that no other device will be altering the PLC location being written to.

The <*tag*> is one of the following:

- valid tag name such as:
 tank.level
- node name and physical address in this format:

\$nodename::address (There are no spaces in the string)

where:

\$ distinguishes a node name from a tag name.

nodename is specified in the Node table.

address is the PLC address syntax.

Example: Using RAMP with a PLC Address

RAMP \$fred::N7:35 -10

if the value at the PLC address \$fred::N7:35 is 50, the command will write the value “40” to the PLC address.

<value> is an amount to add or subtract from the current PLC value, as follows:

- A numeric value with a sign indicating add (+) or subtract (-).
- The value to add or subtract, as a **percentage** of the total MIN/MAX range, with a sign indicating add (+) or subtract (-). The formula is:

$$\text{new} = \text{old} \pm (\text{percentage}/100 * (\text{MAX} - \text{MIN}))$$

Percentage values may only be used with tag names, *not* with PLC addresses.

Unlike SET, if RAMP calculates a value that is outside of the tag’s MIN and MAX range, the write will not fail. Instead, RAMP will write the highest or lowest allowable value to the PLC.

Examples: The RAMP Command

RAMP tank.level +50%

if the value of tank.level is 100, MIN = -100 and MAX = 900, the command would write the value “600” to the PLC.

RAMP tank.level +75%

if tank.level is 900, MIN = 0 and MAX = 1000, the command will write 1000 to the PLC, as this is the highest allowable value.



ATTENTION: If a node has been disabled, the RAMP command will change the value in the Current Value Database, but not in the PLC.

REMARK

REMARK *<comment>*

Permits the operator to store remarks in the Activity Log file.

<comment> is a line of text.

Important: The Activity Log file set must have been configured to log remarks, otherwise no comment will be logged.

RESTORE

RESTORE *<source> <destination> [options]*

Copies the specified files from an archive disk to another disk. Any files split during the archiving process, are recombined in their original format.

<source> is the drive and directory name for the archived files that are to be restored.

<destination> is the name of the drive or directory where the restored files are to be written. If you are restoring a Data Logger model file set, use the @ symbol with the model name:
@*<model_name>*
to restore the Data Logger file set created by the specified model.

[options] for standard restore procedures, you won't need to use any of the following options:

/fast use this option only when ControlView is not actively monitoring or controlling the plant. Specifying /fast will speed up the restore process at the expense of overall system performance.

/noid use this option if the archived files do not have an id file, i.e. if they were archived with the /noid option.

/overwrite use this option to automatically overwrite files at the destination, otherwise files will not be restored if they already exist.

/set normally, the source files will not need to be archived again unless they are changed. Use this option if you want the source files to be immediately archivable.

/verify use this option when archiving critical data. /verify will cause ControlView to check that each file has been correctly written at the destination. Using the /verify option will slow down the archiving process.

/noclear normally, the destination files will not need to be archived again unless they are changed. Use this option if you want the destination files to be immediately archivable.

REVISION

REVISION

The REVISION command displays the revision number of the ControlView system, the software options and the serial number.

REVISIONRPT

REVISIONRPT

Opens the Revision Report window. From this window, you can produce an ASCII file report which describes the revision level of the ControlView system and all options currently installed in ControlView.

RUN

RUN *<task>* [*parameters*]

Runs a custom application generated with the C-Toolkit option.

<task> is the name of the C application (without the .tsk extension). This task must reside in C:\ACCESS\CTK\TSK, where C is the drive where ControlView is installed.

[*parameters*] are any parameters that the application requires.

Refer to the C-Toolkit documentation for more information.

SCREENPRINT

SCREENPRINT [/P*n*]

Generates a screen print on the specified printer, which must be a graphics printer defined in the Printer Configuration Editor window.

/P*n* specifies one of the four printers defined in the Printer Configuration Editor window (/P1 for Printer1, /P2 for Printer2, etc). It must be a graphics printer (color or black and white).

You can define a Key Definition for this command if you don't want the command line to appear in the printout.

SECURITY

SECURITY

Opens the Command Security table. The Command Security table defines the security level for commands and macros.

SECURITYRPT

SECURITYRPT

Opens the Security Command Report window. From this window, you can produce an ASCII file report which describes all secured objects.

SET

SET [*options*] <tag> <value>

Writes a value to a tag.

SET [*options*] <tag> <tag>

Writes the value of the first tag to the second tag.

[*options*] are:

/s Silence all error messages (such as "Write Failure").

/v Perform read-back verify on the write.

Normally, the system waits for an ACK (acknowledge) from the local communications module (e.g., 1771-KF2), to determine if a write has passed. This is sufficient verification of writes in most cases.

The /v option provides an extra level of security by performing a read immediately after the write to verify that the value was actually altered in the PLC.

Use this option only if it is certain that no other device will be altering the PLC location being written to.

This option is useful if the communications network is in poor condition, or susceptible to noise interference.

The <tag> is one of the following:

- Valid tag name, such as:
tank.level
- for analog and digital tags, a node name and physical address in this format:

\$nodename::address (There are no spaces in the string.)

where:

\$ distinguishes a node name from a tag name.

nodename is specified in the Node table.

address is the PLC address syntax.

Example: Using SET with a PLC Address

```
Set $fred::N7:35 10
```

writes "10" to the PLC called *fred* at the memory location *N7:35*.

- for string tags, a node name and physical address in the above format, followed by **/Lnn** where nn is the length of the tag. The length must be in the range 1-82. The value is null padded to the length specified, then written to the PLC.

Important: String tags are a feature of Allen-Bradley PLCs. For specific information refer to the *A-B Drivers User Manual*.

Example: Using the SET Command with a String and an Integer PLC Address

Here's an example of a valid PLC address:

```
SET $fred::N100:0 "\23 " /L12
```

null pads the value to 12 characters and writes this value to the PLC:

\\23\\20\\00\\00\\00\\00\\00\\00\\00\\00\\00\\00

Important: If the PLC address is in the String Section, the value is null padded to 82 characters, irrespective of the length specified, then 82 characters are written to the PLC.

Example: Using the SET Command with a String and a String PLC Address

Here's an example of a valid PLC address:

```
SET $fred::ST10:0 "\23 " /L12
```

null pads the value to 82 characters and writes this value to the PLC:

\23\20\00\00\00\00\00\00\00\00\00\00\00\00\00\00\00\00\00\00
 \00
 \00
 \00\00\00\00\00\00\00\00\00\00\00\00\00\00\00\00

The <value> is one of the following:

For analog tags:

- Numeric value within the range specified by the tag's Minimum and Maximum values.
- Percentage of the total MIN/MAX range. The formula is:

$$\text{value} = \text{MIN} + \text{percentage}/100 * (\text{MAX} - \text{MIN})$$

- Tag name of another analog or digital tag.

For digital tags:

- Numeric value zero (0) or one (1).
- Tag's ON or OFF label specified in the tag database. Setting a digital tag to its ON label will write the value one (1) to the PLC, and setting to its OFF label will write the value "0".
- Tag name of another digital or analog tag. If it is an analog tag with a value that is *not* 0, the value 1 is written to the digital tag, otherwise the value 0 is written.

Only numeric values can be used when writing directly to a PLC location, since Minimum, Maximum, and ON/OFF labels are not specified.

For string tags:

- A group of characters enclosed in quotes. Escape sequences and any characters, including leading, embedded and trailing blanks and quotes can be used. However each single backslash character \ must be entered either as a double backslash \\ or the escape sequence \5C. The string can be any length, as long as it fits on the command line.
- If <value> is omitted, the Set String Tag window is displayed, allowing you to type in a longer string value (maximum 82 characters). The screen accepts the same characters as the command line, except that each trailing blank must be entered as the escape sequence \20.

Examples: The SET Command

SET tank.level 50%

if MIN = -100 and MAX = 900, the command would write the value 400 to the PLC.

SET valve.23 open

uses the on label for this digital tag to write a "1" to the PLC.

SET string.2 "open"

writes the string *open* to the PLC.



ATTENTION: If a node has been disabled, the SET command will change the value in the Current Value Database, but not in the PLC.

STARTUP

STARTUP [*macro*]

Specifies the name of the Startup macro. This setting is stored and will be active even after you startup the system again.

[*macro*] is the file name of the macro to be executed when ControlView is started.

Typing STARTUP with no parameter will reset the Startup macro name to "startup".

STATUS

STATUS [*options*] <*tag*> [*tag*]...

Displays tag information.

The [*options*] are:

- /Xnnn** Positions the STATUS window *nnn* pixels from the left edge of the screen. The screen width is 640 pixels.
- /Ynnn** Positions the STATUS window *nnn* pixels from the top of the screen. The screen height is 350 pixels.
- /Hnn** Sets the number of tags that are visible in the STATUS window to *nn*. Minimum is 2.
- /A** Automatically sets the height of the STATUS window to display all the selected tags (where possible).

The *<tag>* is one of the following:

- valid tag name, such as:

`loop3.cv`

- valid tag name with wild card substitution, where valid wild cards are:

Character	meaning
*	all tags in one level of the database
?	one character at the end of a tag or group name
+	when the + follows a group name, all points in the current and lower level groups when the + follows a structure name, all points in the current and lower level structures where the + precedes a point name, all the tags that end with point name + by itself, all tags in the database

- for analog and digital tags, a node name and physical address in this format:

`$nodename::address` (There are no spaces in the string.)

where:

`$` distinguishes a node name from a tag name.

`nodename` is specified in the Node table.

`address` is the PLC address syntax.

Example: Using STATUS with a PLC Address

Status \$fred::N7:35

reads the value stored in the PLC called *fred* at the address *N7:35*.

-
- for string tags, a node name and physical address in the above format followed by the length of the string. The length must be in the range 1 – 82 characters.

Important: String tags are a feature of Allen-Bradley PLCs. For specific information refer to the *A-B Drivers User Manual*.

Example: Reading a String at a PLC Address

Status \$fred::N100:0 14

reads the value of a string 14 characters long, starting at the PLC address *\$fred::N100:0*.

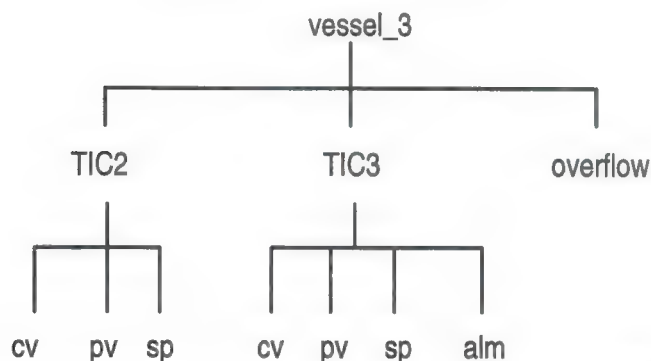
If a single tag is given for location, database information (such as description, node, and address) will be displayed, along with the tag name or location, and its current value.

If multiple tags are specified, a vertical list of all tag names and values will be displayed. Up to 7 tags can be displayed in the window, the rest are available using **PgUp** and **PgDn**. A maximum of 100 values may be monitored in this list.

Note that multiple *tags* can be given. All tags specified will be combined into one list.

Examples: The STATUS Command

The following examples use this database:



42555

STATUS vessel3.TIC3.cv

displays information on the point vessel3.TIC3.cv.

STATUS vessel3.TIC3.*

displays information on the four points in the TIC3 group.

STATUS vessel3.TIC?.cv

displays information on both CV points.

STATUS +.cv

displays information on vessel3.TIC2.cv and vessel3.TIC3.cv.

STATUS vessel3.TIC3.cv vessel.overflow

displays information on the two tags.

STATUS +

displays information on all eight points in the database.

When the STATUS command reads string tags:

- all leading and embedded nulls (the value zero) are displayed as \00
- trailing nulls are not displayed
- leading and embedded blanks are displayed as the space character
- trailing blanks are displayed as \20
- \ is displayed as \

TIME

TIME [options] [format]

Displays the time and date on the screen. The command without any options or format string toggles the display window on and off.

The [options] are:

/Xnnn	Positions the time display window to <i>nnn</i> pixels from the left edge of the screen. The screen width is 640 pixels.																
/Ynnn	Positions the time display window to <i>nnn</i> pixels from the top edge of the screen. The screen height is 350 pixels.																
/Fnn	Sets the foreground color of the text in the time display window, where <i>nn</i> : <table> <tr> <td>00 = black</td><td>08 = navy</td></tr> <tr> <td>01 = blue</td><td>09 = teal</td></tr> <tr> <td>02 = green</td><td>10 = blue (blink)</td></tr> <tr> <td>03 = cyan</td><td>11 = orange</td></tr> <tr> <td>04 = red</td><td>12 = red (blink)</td></tr> <tr> <td>05 = magenta</td><td>13 = grey</td></tr> <tr> <td>06 = yellow</td><td>14 = yellow (blink)</td></tr> <tr> <td>07 = white</td><td>15 = brown</td></tr> </table>	00 = black	08 = navy	01 = blue	09 = teal	02 = green	10 = blue (blink)	03 = cyan	11 = orange	04 = red	12 = red (blink)	05 = magenta	13 = grey	06 = yellow	14 = yellow (blink)	07 = white	15 = brown
00 = black	08 = navy																
01 = blue	09 = teal																
02 = green	10 = blue (blink)																
03 = cyan	11 = orange																
04 = red	12 = red (blink)																
05 = magenta	13 = grey																
06 = yellow	14 = yellow (blink)																
07 = white	15 = brown																
/Bnn	Sets the background color of the time display window, where values for <i>nn</i> are as in /F above.																

/Tx	Sets the font size of the time display window. The value of x can be set to s, m, or l, representing small, medium, and large font sizes respectively.
/R	Resets all options to their default values: /X640 /Y350 /Tm /F03 /B00

The *[format]* is a string which represents the desired format of the time display, enclosed in double quotes:

YYYY	Displays the year in full.
YY	Displays only the last two digits of the year.
MMM	Displays a three letter abbreviation for the month.
MM	Displays the month in numerical format.
DD	Displays the day of the month in numerical format.
hh	Displays the hours.
mm	Displays the minutes.
ss	Displays the seconds.
ap	Displays the time in twelve hour format. Default is 24 hour format.

The format string consists of any combination of the above codes, enclosed by double quotes. The format string may include the punctuation characters period(.), slash(/), and colon(:).

Each format code must be typed in using upper or lower case as indicated. For example, do not enter MMM as mmm, or hh as HH.

The default format is: "MMM DD, YYYY hh:mm:ss ap"

Example: The TIME Command

TIME "MMM DD, YYYY - hh:mm ap"
displays the time as Mar 17, 1993 - 1:30 pm.

TIME /X0 /Y0"MMM DD, YYYY - hh:mm ap"
displays the time as Mar 17, 1993 - 1:30 pm in the top left corner of the screen.

TOGGLE

TOGGLE [*options*] <*tag*>

Reads the tag's value and writes back a 1 or 0 as follows:

- If the tag value is 0, TOGGLE changes it to 1.
- If the value is not 0, TOGGLE changes it to 0.

The [*options*] are:

- /s silence all error messages (such as "Write Failure").
- /v perform a Verify on the write.

Refer to the SET command for more information about these options.

The <*tag*> is one of the following for an analog or digital tag:

- valid tag name, such as:

`loop3.cv`

- node name and physical address in this format:

`$nodename::address` (There are no spaces in the string)

where:

- `$` distinguishes a node name from a tag name.
- `nodename` is specified in the Node table.
- `address` is the PLC address syntax.

Example: Using TOGGLE with a PLC Address

Toggle \$fred::N7:35

toggles the value stored in the PLC called node *fred* at the address *N7:35*.

TOPLEVELOFF

TOPLEVELOFF

Disables the TOPLEVEL macro from running whenever the operator closes all the windows.

TOPELEVELON

TOPELEVELON

Enables the TOPELEVEL macro to run whenever the operator closes all windows.

TOPELEVELON is the default state. TOPELEVELON need only be run if the TOPELEVELOFF command has already been run.

TOUCHCONFIG

TOUCHCONFIG

Runs the touch screen calibration procedure.

TOUCHOFF

TOUCHOFF

Disables the touch screen.

TOUCHON

TOUCHON

Enables the touch screen. If you will be using the touch screen consistently, add this command to the STARTUP macro, otherwise you will need to enter TOUCHON each time you start up ControlView.

TRENDRPT

TRENDRPT [*filename*]

Opens the Trend Report window. From this window, you can produce an ASCII file report on a trend display configuration.

[*filename*] is the name of a trend display. If not specified, the filename will have to be entered in the appropriate field in the window.

UNDEFINE

UNDEFINE <*symbol*>

Removes a symbol definition that has been created using the DEFINE command. If an asterisk (*) is specified for <*symbol*>, all symbol definitions are removed.

Example: The UNDEFINE Command

UNDEFINE test

removes the definition for the symbol “test” which was previously created with the DEFINE command.

UNDEFINE *

removes all symbol definitions.

UNLOAD

UNLOAD

Unloads the database.

All applications requiring tag values must be stopped before a database can be unloaded.

WINDOWCONFIG

WINDOWCONFIG [*options*]

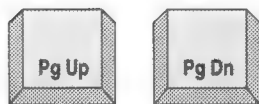
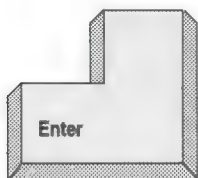
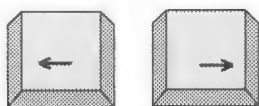
Opens the Window Removal Configuration window where the operating characteristics of the automatic window removal are set up.

The [*options*] are:

- | | |
|--------------|--|
| /Xnnn | Positions the Window Removal Configuration window to <i>nnn</i> pixels from the left edge of the screen. The screen width is 640 pixels. |
| /Ynnn | Positions the Window Removal Configuration window to <i>nnn</i> pixels from the top edge of the screen. The screen height is 350 pixels. |

Keys

Configuration Keys



Selecting Menu Items

Select from a list of items or menu actions.

Accept the selected item.

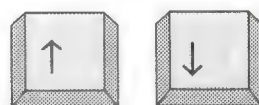
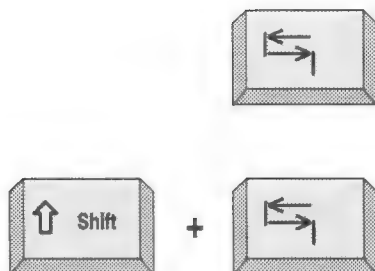
Page through a vertical list that is too large to fit in an application's window.

Selecting Data Entry Fields

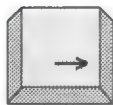
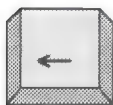
Select the next data entry field.

Select the previous data entry field.

Select the next data entry field above or below the current field.



Editing Data Entry Fields



Move the cursor within a data entry field.



Remove the character under the cursor.



Move the cursor to the left one character, and delete that character.



Move the cursor to the beginning of the data entry field.



Move the cursor one position past the last character.

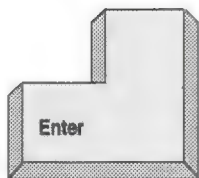


Delete the contents of the data entry field.

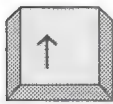


Delete all characters from the cursor position to the end of the data entry field.

Popup Lists for Data Entry Fields



Display the popup list for the selected data entry field.



Select an entry from the popup list. When the desired entry is selected, press **Enter** to copy the entry into the data entry field.



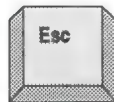
Exit the popup list without selecting an entry.

Saving Data

Save information to disk.



Leave a screen without saving any changes.



Runtime Control Keys

Selecting a Window

Select the next window on the screen.



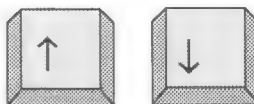
Select the previous window on the screen.



Toggle to the command line. The line will appear, allowing data entry. Issuing this command again will return keyboard control to the selected window, and clear the Command Line.



Cycle through the last 16 commands that were entered on the command line.



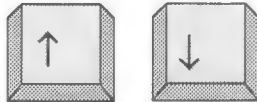
Stop the selected application.



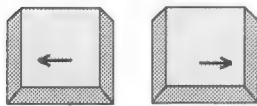
Moving a Window



Toggle into Move Window mode. When in this mode, the window border will change from white to flashing red.



Move the window 14 pixels vertically.



Move the window 8 pixels horizontally.



Move the window to the upper left corner of the screen.



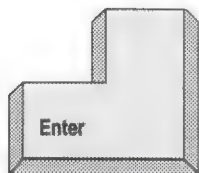
Move the window to the lower left corner of the screen.



Move the window to the upper right corner of the screen.



Move the window to the lower right corner of the screen.



Leave Move Window Mode.

Error Windows



Remove an error window from the screen.



Remove error windows from the screen and delete backlog of error messages.

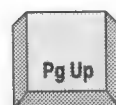
Keys Used in List/Print



Move the scroll bar to the top of the file.



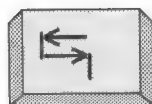
Move the scroll bar to the bottom of the file.



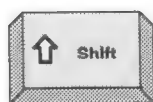
Move the scroll bar up one screen.



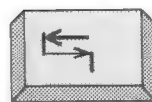
Move the scroll bar down one screen.



Scroll the screen horizontally to the right.



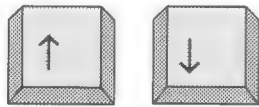
+



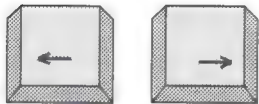
Scroll the screen horizontally to the left.

Mouse GRAFIX Runtime Keys

The Key Command List and Display Keys



Select the next Key Command object that is directly above or below the current object.



Select the next Key Command object that is directly to the left or right of the current object.



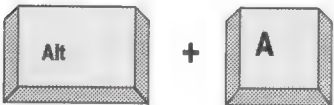
Select the next object in the Key Command List.



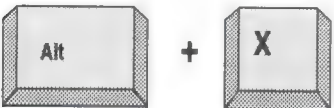
Select the previous object in the Key Command List.



View the Key Command List Legend.



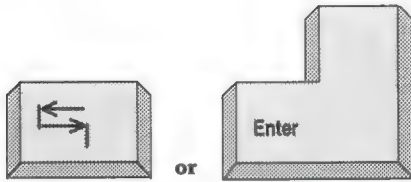
View the Display Key Legend.



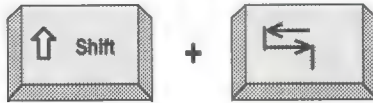
Clear the Display Key Legend or Key Command List Legend.

Recipe Management Functions

Select the next Data Entry field.



Select the previous data entry field.



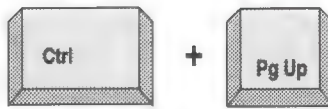
Send the tag's value in the selected data entry field to the PLC.



Send the values for all of the data entry fields on the screen to the PLC.



Upload the PLC value into the selected data entry field.



Upload all PLC values into all data entry fields on the screen.



Select the batch field for data entry save.



Select the batch field for data entry restore.



Perform data entry Save/Restore operation after **Alt-S** or **Alt-R** have been pressed.



Abort data entry Save/Restore operation after **Alt-S** or **Alt-R** have been pressed.



Database Import/Export

You use the database import and export utilities to share data with programs that store data in ASCII format. You can either use the menus to enter the required information or you can use the command line to type in commands.

Using Menus for Database Import/Export

To use the menu system to access the Database Import Utility and the Database Export Utility do the following:

1. Choose *Edit Database* under Configure in the Setup menu.
2. Choose *new* from the popup menu to open the Database Setup window.
3. Select the *Import* or *Export* options to display the required windows. Refer to Chapter 2, *The Setup Menu* for detailed instructions.

Database Export Commands

You can export a ControlView database to an ASCII file. This is useful for listing, sorting, merging and documenting databases.

To export a ControlView database to an ASCII file, use the following command:

```
DBEXP <dbname> <outfile>[/s] [/c] [/dx] [/o]
```

Where:

<dbname>	is the name of the database to be exported.
<outfile>	is the destination file for the entire database information The default file extension for the tag data file is .DBS; the default extension for the alarm file is .ALM
/s	indicates that the separate files are to be created for the various tags, as follows:
<i>f</i> name.grp	group tag information
<i>f</i> name.dig	digital tag information
<i>f</i> name.ana	analog tag information
<i>f</i> name.stg	string tag information
<i>f</i> name.str	structure tag information
<i>f</i> name.std	digital structure member
<i>f</i> name.sta	analog structure member
<i>f</i> name.sst	string structure member

And these two files will be created for alarm information:
outfile.aa analog alarm information
outfile.ad digital alarm information

You cannot import these files unless you combine them into two ASCII files as follows:

- one file containing the data from the 8 tag files in the sequence listed above
- one file containing the data from the 2 alarm files

Example: Using DOS to Combine Files

In DOS:

To combine the 8 exported tag files into one ASCII file called TAGS, type:

```
copy fname.grp + fname.dig + fname.ana + fname.stg  
+ fname.str + fname.std + fname.sta + fname.sst  
TAGS
```

Important: The filenames must be typed in this sequence.

To combine the 2 exported alarm files into one ASCII file called ALARM, type:

```
copy outfile.aa + outfile.ad ALARM
```

/c	indicates that the output is to be placed in column format, which can be read by other programs like dBASE and Lotus 123. The default (without the /c option) is "free form". Free form is the format used by the DBIMP utility so if you use the /c option, you can't re-import the file.
/dx	indicates that the fields in the exported file are to be separated by a character rather than by white space, <i>x</i> specifies the character to be used. If you use /dx, you cannot re-import the file back into ControlView.
/o	exports data in reverse alphabetical order. If you plan to re-import the data back into ControlView, having it in reverse alphabetical order significantly speeds up the import.

The destination files will be located in the directory specified in the Configure Database Directory window.

Once you begin exporting the file, there is no way to cancel the process.

Examples: Database Export

dbexp test tagfile

will export the Database called *test* to a file called *tagfile.dbs* and the alarming information, if any, to a file called *tagfile.alm*

dbexp test split /s /c

will export the group tag information to a file called *split.grp*, the digital tag information *split.dig*, the analog tag information to *split.ana*, the string tag information to *split.stg*, the structure tag information to *split.str*, the digital structure member information to *split.std*, the analog structure member information to *split.sta* and the string structure member information to *split.sst*. The data will be stored in column format.

Important: It is strongly recommended that you use the export option to create a backup copy of your database. Use the */o* parameter for speed and convenience.

Database Import

As an alternative to using the Database Editor, the tag information can be generated by some external means (a text editor, database, spreadsheet, BASIC program, 'C' program, etc.), then imported into the system.

This information must be plain ASCII text,—not DIF, or some other file format—organized in the format specified below.

To use this utility, type the following command from the ControlView command line:

DBIMP <dbname> DBS200 <taginfo> [ALM200 <alminfo>]

Where:

- <dbname>** is the name (without path) of the database to be created.
- <taginfo>** is the name of the file (with directory path if necessary) containing the tag information to be imported, in the format specified in Import/Export File Format below.
- <alminfo>** is the name of the file (with directory path if necessary) containing the alarm information to be imported, in the format specified in Import/Export File Format below.
- DBS200** is a data file (with directory path if necessary) needed by DBIMP. This file describes the tag database structure to the import utility, and may change with new releases of the software. Do not alter or delete this file.

ALM200 is a data file (with directory path if necessary) needed by DBIMP. This file describes the alarm database structure to the import utility, and may change with new releases of the software. Do not alter or delete this file.

Important: You need to specify the path when the path is different from the default path specified in the Configure Database Directory window.

Once you begin importing the file, there is no way to cancel the process.

Example: Database Import

```
dbimp test dbs200 testinfo.dbs
```

will import the tag information contained in the file *testinfo.dbs* and create a database called *test*.

```
dbimp test dbs200 testinfo.dbs alm200 testinfo.alm
```

will import the tag information contained in the file *testinfo.dbs* and the alarm information contained in the file *testinfo.alm* to create a database called *test*.

Import/Export File Format

The following format must be used when creating a file to be imported using DBIMP.

DBEXP also produces files in this format (except when you use the */c* option for column mode or the */dx* option for delimiter mode).

General Rules

Here are the general rules for file formats:

- data fields must be separated by any white-space characters (blank, tabs, new line, etc.)
- string data fields may not cross line boundaries
- floating point data may be expressed in either standard floating point or exponential form up to a maximum of 15 characters
- group and structure tags must be defined before elements within the group or structure can be defined

String Delimiters

String data fields must be delimited by a double quote ("). The double quote (") must not be used as a character in a string data field. To enter double quotes inside a string, use the escape sequence \22.

Comments

Input data files may contain descriptive comments which will be ignored during the data importing process. Comments may start anywhere on a data line and will continue to the end of the same line. All comments begin with the semi-colon(;) character. Note that semi-colons contained in strings (i.e. those found within quotation marks) will not be recognized as the start of a comment.

Example: Comments

Here is a definition of a group record, followed by a comment.

```
G group1.group2 ;this is a comment
```

Tag Definition

The ControlView database has eight different types of records:

- group tags
- digital tags
- analog tags
- string tags
- structure tags
- digital structure members
- analog structure members
- string structure members

Each of these record types has a different format. The ASCII file that DBEXP creates (and any text files that you create to import into ControlView) must contain the appropriate record formats outlined below.

Define each point or group in the ASCII file one at a time with a carriage return separating each definition.

Defining Groups

Use this format to define a group:

Table C.A
Group Definition Formats

Field Name	Field Contents	Maximum Field Size	Delimit With Quotes
G	record type identifier (use this literal string to identify a group tag)		No
name	the complete tag name	20	No

Example: Defining Groups

This is the format for two groups as they would appear in an ASCII file. Both strings are terminated with a carriage return.

G group_1

G group_1.group_2

Defining Digital Points

Use this format to define digital points:

Table C.B
Digital Point Formats

Field Name	Field Contents	Maximum Field Size	Delimit With Quotes
D	record type identifier (use this literal string to identify a digital tag)		No
name	the complete tag name including any group names	20	No
description	the tag's description	32	Yes
address_type	address type (None, PLC2, PLC3, PLC5, PLC5/250, PLC5-40/60, SLC500, S5, Modicon, CtrlView)	10	No
node	address node string	8	Yes
address	tag's address string	31	Yes
class	the tag's scan class (a letter between A and H or empty quotes")	1	Yes
access	access code (a letter between A and P or an asterisk)	1	No
OFF_label	the off label string	10	Yes
ON_label	the on label string	10	Yes
initial	initial value string (ON_label or OFF_label)	10	Yes
units	units string	6	Yes

*When the point has no scan class, such as for a local tag, put nothing inside the delimiting quotes, like this: ""

Example: Digital Point

This is the format for a digital record as it would appear in an ASCII file. This whole string is terminated with a carriage return.

```
D group1.digital1 "Digital tag number one" PLC3
"NODE1" "N1:1/1" "A" * "HI" "LO" "LO" "VOLTS"
```

Defining Analog Points

Use this format to define analog points:

Table C.C
Analog Point Formats

Field Name	Field Contents	Maximum Field Size	Delimit With Quotes
A	record type identifier (use this literal string to identify an analog tag)		No
name	the complete tag name including any group names	20	No
description	the tag's description	32	Yes
addr_type	address type (None, PLC2, PLC3, PLC5, PLC5/250, PLC5-40/60, SLC500, S5, Modicon, CtrlView)	10	No
node	the tag's node	8	Yes
addr	the tag's address	31	Yes
class	the tag's scan class (a letter between A and H or empty quotes")	1	Yes
access	access code (a letter between A and P or an asterisk)	1	No
data_type	analog data type	7	No
minimum	minimum value (floating point)	15	No
maximum	maximum value (floating point)	15	No
initial	initial value (floating point)	15	No
offset	value offset (floating point)	15	No
scale	value scale factor (floating point)	15	No
units	units string	6	Yes

*When the point has no scan class, such as for a local tag, put nothing inside the delimiting quotes, like this: ""

Example: Analog Point

This is the format for an analog point as it would appear in an ASCII file. This whole string is terminated with a carriage return.

```
A area3.analog1 "Analog tag number one" PLC5
"NODE10" "F1:1" "C" * Float -100.0 1.0E+02 50
100.0 1.0 "litres"
```


Defining String Tags

Use this format to define string tags:

Table C.D
String Tag Formats

Field Name	Field Contents	Maximum Field Size	Delimit With Quotes
ST	record type identifier (use this literal string to identify a string tag)		No
name	the complete tag name including any group names	20	No
description	the tag's description	32	Yes
address_type	address type (None, PLC2, PLC3, PLC5, PLC5/250, PLC5-40/60, SLC500, S5, Modicon, CtrlView)	10	No
node	address node string	8	Yes
address	tag's address string	31	Yes
class	the tag's scan class (S1, S2, S3 or empty quotes*)	2	Yes
access	access code (a letter between A and P or an asterisk)	1	No
length	length of string tag	2	No
initial value	initial value of string tag**	82	Yes

*When the point has no scan class, such as for a local tag, put nothing inside the delimiting quotes, like this: ""

**The initial value can be shorter than the defined length of the string tag. Trailing spaces will be imported or exported as spaces. The initial value must be broken into segments if it is longer than 82 bytes, as a result of entering some characters as escape sequences. Each segment must be all on the same line, be enclosed in quotes, and not exceed 82 characters. The segments must be connected with the + character. For example:

```
"\30\31\32\33\34\35\36\37\45\67\56\45\30\45\34\34\67\45\34\56\45\45" +
"\34\43\43\54\55\43\33\34\54\34\56\54\33\43\54\55\64\56\66\43\56\34" +
"\43\35\45\34\55\45\34\44\54\34\54\34\54"
```

Example: String Tag

This is the format for a string tag record as it would appear in an ASCII file. This whole string is terminated with a carriage return.

```
ST string.1 "string tag" PLC5-40/60 "PLC540"
"ST10:0" "S1" * 18 "1234567890"
```

Defining Structure Tags

Use this format to define structure tags:

Table C.E
Structure Tag Formats

Field Name	Field Contents	Maximum Field Size	Delimit With Quotes
S	record type identifier (use this literal string to identify a structure tag)		No
name	the complete tag name including group and structure name	20	No
description	the tag's description	32	Yes
address_type	address type (None, PLC2, PLC3, PLC5, PLC5/250, PLC5-40/60, SLC500, S5, Modicon, CtrView)	10	No
node	address node string	8	Yes
base_addr	the base address for the entire structure	31	Yes

Example: Structure Tag

Here is a sample structure tag exported from a database:

```
S TIMER "A PLC5 timer" PLC5 "SNOOPY" "T4:3"
```

Defining Analog Structure Members

Use this format to define analog structure members:

Table C.F
Analog Structure Member Formats

Field Name	Field Contents	Maximum Field Size	Delimit With Quotes
SA	record type identifier (use this literal string to identify an analog structure member)		No
name	the complete tag name including group and structure name	20	No
description	the tag's description	32	Yes
address_offset	bit offset from the base address	31	Yes
class	the tag's scan class (a letter between A and H or empty quotes*)	1	Yes
access	access code (a letter between A and P or an asterisk)	1	No
data_type	analog data type	7	No
minimum	minimum value (floating point)	15	No
maximum	maximum value (floating point)	15	No
initial	initial value (floating point)	15	No
offset	value offset (floating point)	15	No
scale	value scale factor (floating point)	15	No
units	units string	6	Yes

*When the point has no scan class, such as for a local tag, put nothing inside the delimiting quotes, like this: ""

Example: Analog Structure Member

Here is a sample analog structure member exported from a database:

```
SA TIMER.ACC "Timer's accumulator" "0.ACC" "A" *
Default 0 1000 0 0.0 1.0 "BEANS"
```

Defining Digital Structure Members

Use this format to define digital structure members:

Table C.G
Digital Structure Member Formats

Field Name	Field Contents	Maximum Field Size	Delimit With Quotes
SD	record type identifier (use this literal string to identify a digital structure member)		No
name	the complete tag name including group and structure name	20	No
description	the tag's description	32	Yes
address_offset	bit offset from the base address	31	Yes
class	the tag's scan class (a letter between A and H or empty quotes*)	1	Yes
access	access code (a letter between A and P or an asterisk)	1	No
OFF_label	the off label string	10	Yes
ON_label	the on label string	10	Yes
initial	initial value string (ON_label or OFF_label)	10	Yes
units	units string	6	Yes

*When the point has no scan class, such as for a local tag, put nothing inside the delimiting quotes, like this: ""

Example: Digital Structure Member Format

Here is a sample digital structure member exported from a database:

```
SD TIMER.DN "Timer's done bit" "0.DN" "A" *
"RESET" "SET" "RESET" ""
```

Defining String Structure Members

Use this format to define string structure members:

Table C.H
String Structure Member Formats

Field Name	Field Contents	Maximum Field Size	Delimit With Quotes
SST	record type identifier (use this literal string to identify a string structure member)		No
name	the complete tag name including group and structure name	20	No
description	the tag's description	32	Yes
address_offset	character offset from the base address	31	Yes
class	the tag's scan class (S1 or S2 or S3 or empty quotes*)	2	Yes
access	access code (a letter between A and P or an asterisk)	1	No
length	length of string tag	2	Yes
initial value	initial value of string tag**	82	Yes

*When the point has no scan class, such as for a local tag, put nothing inside the delimiting quotes, like this: ""

**The initial value can be shorter than the defined length of the string tag. Trailing spaces will be imported or exported as spaces. The initial value must be broken into segments if it is longer than 82 bytes, as a result of entering some characters as escape sequences. Each segment must be all on the same line, be enclosed in quotes and not exceed 82 characters. The segments must be connected with the + character. For example:

```
"\30\31\32\33\34\35\36\37\45\67\56\45\30\45\34\34\67\45\34\56\45\45" +
"\34\43\43\54\55\43\33\34\54\34\56\54\33\43\54\55\64\56\66\43\56\34" +
"\43\35\45\34\55\45\34\44\54\34\54\34\54"
```

Example: String Structure Member Format

Here is a sample string structure member exported from a database:

```
SST STRUCT1.S1 "string member 1" "10" "S1" * 80
"This is the initial value of the tag"
```


Example: Importing a File From dBASE

This section gives a brief explanation of how a simple database created in dBASE III Plus® can be imported into ControlView. The basic steps used are:

1. Create the database in dBASE.
2. Define a dBASE report.
3. Create an ASCII text version of the database by writing the dBASE report to disk.
4. Use DBIMP to import the ASCII file into ControlView.

This example is as simple as possible in order to keep it short. You must already know dBASE so that you can expand on this example to create a more sophisticated database.

Step 1: Create the Database in dBASE

The first step is to create the database in dBASE. A simple database for analog tags would have this format:

Table C.1
Format for Analog Tag Database

Field	Field Name	Type	Width	Dec
1	NAME	Character	20	
2	DESCR	Character	30	
3	ADDR_TYPE	Character	10	
4	NODE	Character	6	
5	ADDR	Character	31	
6	CLASS	Character	1	
7	ACCESS	Character	1	
8	DATA_TYPE	Character	8	
9	MINIMUM	Numeric	14	1
10	MAXIMUM	Numeric	14	1
11	INITIAL	Numeric	14	1
12	OFFSET	Numeric	14	1
13	SCALE	Numeric	14	1
14	UNITS	Character	6	

To create a database called SAMPLE, from dBASE's dot prompt, type the following command:

CREATE SAMPLE

dBASE will then present you with a screen that allows you to define each field in the database.

Step 2: Define a dBASE Report

To create a report, you must:

- Tell dBASE which database you are using with dBASE's USE command. For example, to use the database called SAMPLE, you'd type:

USE SAMPLE

- Define the report template (called RPT_FILE, for example) with the CREATE REPORT command, like this:

CREATE REPORT rpt_file

Set the report options as follows:

Table C.J
dBASE Report Options Settings

Set This Option:	To This Setting:
Page Title	blank
Page Width	300
Left Margin	0
Right Margin	0
Lines per Page	100
Double Space	NO
Page Eject Before Printing	NO
Page Eject After Printing	NO
Plain Page	YES

Define the columns like this:

Table C.K
Column Definition

Contents	Heading	Width	Decimal Places	Total this column
"A"		1		
name		22		
""+descr+""		32		
addr_type		10		
""+node+""		8		
""+addr+""		33		
""+class+""		1		
access		1		
data_type		8		
minimum		14	1	no
maximum		14	1	no
initial		14	1	no
offset		14	1	no
scale		14	1	no
""+units+""		8		

Important: Five fields in the ASCII import file must be surrounded by double quotes. These double quotes were generated with the dBASE report by placing the double quote between two single quotes, and using plus signs to join the quotes to the database field name.

Step 3: Generate the Report

Once you've created both the database and the report format, you must generate the report with the following dBASE command:

```
REPORT FORM rpt_file TO FILE file_out
```

This command creates an ASCII text file called FILE_OUT.TXT.

Step 4: Import the File Into ControlView

The final step is to import the text file into ControlView. From the command line, use DBIMP to import the file. To create a ControlView database called NEW, you'd type:

```
DBIMP new DBS200 file_out.txt
```

Running on a Network

Local Area Networks

A Local Area Network (LAN) consists of two or more workstations connected to a central microcomputer via cable. The central computer, called a file server, runs the network operating system software and stores configuration and data files for use by all the workstations on the system.

Important: Do not confuse the *local area* network, which connects computers and printers, with the *communications* network, which connects programmable controllers and ControlView stations.

The Core software allows ControlView to function on a network and access a file server running Novell NetWare, version 2.12 or later, or FTP® Software Inc.'s version of TCP/IP.

Table D.A
Network Supported for File Server and Printing

This networking software:	Runs on these networks:	Supports file server?	Supports printer?
Novell NetWare	Ethernet	Yes	Yes
	Token Ring	Yes	Yes
	LAN/PC	Yes	Yes
TCP/IP by FTP	Ethernet	Yes	Yes

The use of a central file server facilitates:

- network access to ControlView database files, Mouse GRAFIX files, Reporting templates and files, Derived Tag files, Trending and Event Detector files from the file server
- logging data such as Data Logger files, Activity logs, Alarm logs, etc. to the file server
- network printing of reports, logged data, alarm summaries, and color screens on one or more network printers
- transferring files from one machine to another without floppy disks
- backup of configuration files, Mouse GRAFIX files, database files or log files

Starting ControlView on a Network

Important: ControlView is a complex software system using a real-time multitasking operating system. It is not the place to learn network fundamentals. It is strongly suggested that you familiarize yourself with all network functions, utilities and procedures before attempting to use ControlView with a network. Use a commercial software package such as a word processor or a spreadsheet program to learn the basics and to practice with the network.

Refer to the Novell or FTP® Software Inc. publications with your software for more information.

Starting ControlView on a Novell Network

To start ControlView on a Novell network:

1. Turn on your computer and go to the drive where ControlView is loaded.
2. At the DOS prompt, type:

```
\ACCESS\SYS\RTXSHELL -I<n> press Enter
```

where *n* is the Interrupt number your network adapter card is using.

Examples of Network Settings:

If your network adapter card is using Interrupt 5, at the DOS prompt, type:

```
\ACCESS\SYS\RTXSHELL -I5 press Enter
```

-
3. Load the Novell drivers by changing to the directory they are in and typing:

```
IPX press Enter  
RTXIPX press Enter  
NETn press Enter
```

where *n* is the DOS version you are using: use NET3 for DOS 3.3, NET4 for DOS 4.01, NET5 for DOS 5. See the Novell documentation for details of the IPX and NETn files.

RTXIPX is only required if you'll be using the Application Window.



ATTENTION: You must run RTXHELL.EXE *before* executing the network driver (IPX). Otherwise, ControlView may perform erratically or crash.

Important: You may want to include the RTXHELL, IPX and NETn commands in your AUTOEXEC.BAT file.

Example: A Novell AUTOEXEC.BAT File

Here is an example of a Novell AUTOEXEC.BAT file:

```
@ECHO OFF
PATH C:\DOS;C:\ACCESS\BAT
PROMPT [NOV] $p$g
C:\ACCESS\SYS\RTXHELL -i5
C:\NOVELL\IPX
C:\ACCESS\SYS\RTXIPX
C:\NOVELL\NET5
```

This example assumes the system is DOS 5.0.

Important: The line C:\ACCESS\SYS\RTXIPX is only required when the Application Window is installed.

Example: A Novell CONFIG.SYS File

Here is an example of a Novell CONFIG.SYS file:

```
SHELL=C:\DOS\COMMAND.COM C:\DOS /p /e:2048
INSTALL=C:\DOS\SHARE.EXE /F:8192 /L:20
FILES=75
BUFFERS=30
```

You are now connected to the network drive. The file server's hard disk may be partitioned into a number of logical drives, each with its own designation. The logical drive for logging in may be any letter from D to Z. This documentation will assume it is F.

4. To log in to the network, type:

F: *press Enter*

LOGIN *<your login ID> press Enter*

5. The program will produce a prompt:

PASSWORD?

Type:

<your password> press Enter

Screen messages will verify that you are now connected to the file server.

Important: It is critical that you run the Novell "CASTOFF ALL" command to filter out any broadcast messages that may inadvertently be sent to the ControlView node. At the DOS prompt, type:

CASTOFF ALL *press Enter*

See the Novell *Command Line Utilities* manual for further information. This command must be issued after logging on.

6. To run the ControlView software, go back to the drive it has been installed on and start it up as usual.

Starting ControlView on a TCP/IP Network

Important: ControlView TCP/IP support was developed using PC/TCP® Network Software for DOS, Version 2.05, from FTP® Software Inc. This is the only TCP/IP package that is supported for TCP/IP printers and NFS file system access. Specifically, ControlView was developed using the FTP Software K-210 Generic Kernel.

To start ControlView on a TCP/IP Network:

1. Turn on your computer and go to the drive ControlView is loaded on.
2. At the DOS prompt, type:

\ACCESS\SYS\RTXSHELL -I<n> *press Enter*

where *n* is the Interrupt number your network adapter card is using.

Examples of Network Settings:

If your network adapter card is using Interrupt 5, at the DOS prompt, type:

\ACCESS\SYS\RTXSHELL -I5 *press Enter*

3. Load the FTP drivers as follows:
(This example assumes you are using a Western Digital 8003E network adaptor with a Packet Driver.)

a. Change to their directory.

b. Type:

wd8003e 0x66 <int#> <base I/O> <ram> *press Enter*

ethdrv -i 0x68 *press Enter*

\access\sys\rtxftp *press Enter*

4. If NFS file server access is required, then startup the NFS client.

Type:

idrive *press Enter*

idmnt <parameters> *press Enter*

5. The idmnt command may prompt you for a password. Type the user's password on the file system host.
6. To run ControlView, go back to the drive it has been installed on and start it up as usual.

Example: A TCP/IP AUTOEXEC.BAT File

Here is an example of a TCP/IP AUTOEXEC.BAT file:

```
@ECHO OFF
PROMPT [TCP] $p$g
PATH C:\DOS;C:\PCTCP;C:\access\bat
C:\access\sys\rtxshell -i5
C:\pctcp\wd8003e 0x66 5 0x320 0xC800
C:\pctcp\ethdrv -i 0x68
C:\access\sys\rtxftp
C:\pctcp\idrive
C:\pctcp\idmnt admin rigel /home/ab g: USER ab
```

This example assumes the following:

- wd8003e uses the 0x66 software interrupt
- ethdrv uses the 0x68 software interrupt
- file system is admin
- hostname is rigel
- path is /home/ab
- network drive is g:
- user name is ab

Example: A TCP/IP CONFIG.SYS File

Here is an example of a TCP/IP CONFIG.SYS file:

```
SHELL=C:\DOS\COMMAND.COM C:\DOS /p /e:2048
INSTALL=C:\DOS\SHARE.EXE /F:8192 /L:20
device=c:\pctcp\ipcust.sys
device=c:\pctcp\ifcust.sys
FILES=75
BUFFERS=30
lastdrive=g:
```

Accessing Network Files

ControlView allows users to store their logged data and configuration files on remote networked file servers. Remote drives allow configuration data to be easily distributed to other ControlView stations. For example, your engineering department can create applications and transfer them to the file-server for distribution to the factory floor ControlView stations via the LAN. File servers also provide a safe, remote location on which to store logged data. This can be useful for retrieving valuable logged information if the local ControlView station's hard drive fails.



ATTENTION: Do *not* store the ControlView *system* files on a file server. Only data or configuration files can be stored on file servers.

If you have multiple ControlView stations, don't try to access configuration files from more than one ControlView at the same time. ControlView data files cannot be shared by multiple stations. To distribute applications to other ControlView stations, copy the configuration files to the station's local drive. To log data from multiple stations to a central file server, be sure each station is logging to its own separately named file set.



ATTENTION: Do *not* allow more than one ControlView station to log alarms to the same file. If you do, alarms could be logged out of sequence or lost. Be sure each ControlView station uses a different filename in this field.

It is strongly suggested that each ControlView on the network use a different filename or path for their application files as well, in order to distinguish which archives came from which ControlView.



ATTENTION: When using an NFS file system, do *not* create or edit databases on a network mounted drive.

No special configuration is necessary to utilize the network file server. All that is required is that the network drivers be loaded and functioning correctly. ControlView can access any logical drive or directory that can be accessed by DOS. To utilize a remote drive, enter the full DOS drive letter and path in the "directory" field of the module you are editing. Paths are defined differently in each ControlView option or module, so see the appropriate manual to define paths in the particular module you are editing.



ATTENTION: When using an NFS file system, do *not* create or edit Reporting template files on a network mounted drive. Reports may be stored on network drives.

Using Network Printers

Connecting ControlView to a local area network (LAN) allows print jobs to be sent to several different network printers.

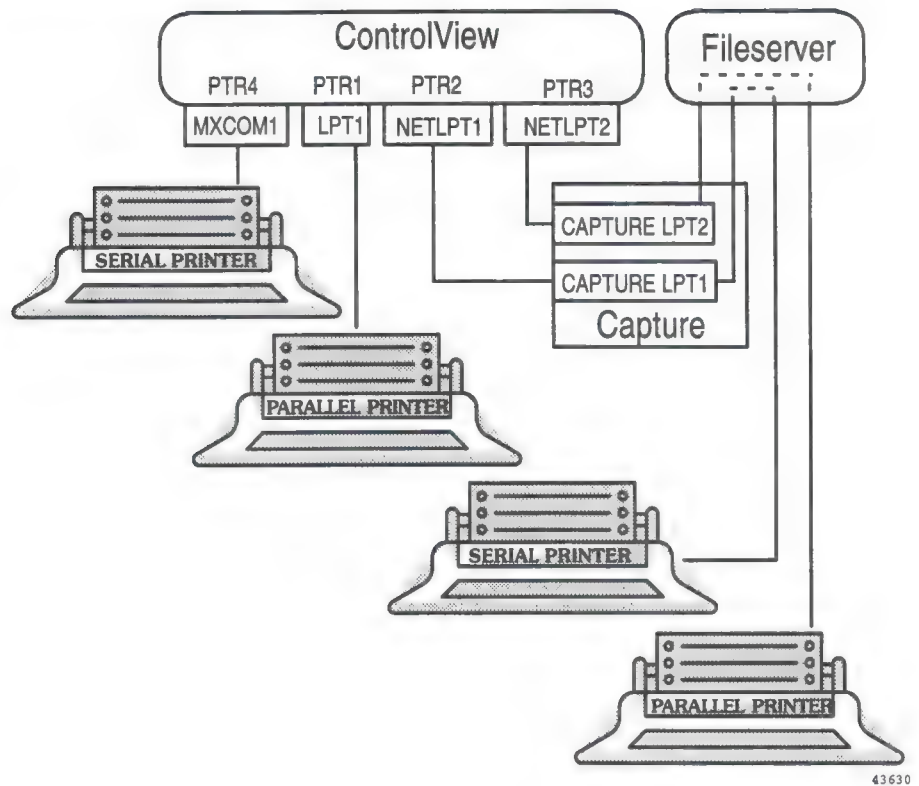
ControlView prints two types of files—standard ASCII files sent with the print command, and bit-mapped images sent with the SCREENPRINT command. Standard ASCII files can be printed on virtually any printer, but screen prints require a compatible graphics printer.

Novell Capture

Novell NetWare includes a program called CAPTURE which redirects output sent through local parallel ports to printers connected to the file server, rather than to devices connected to the individual workstation.

ControlView has a command called CAPTURE which emulates the Netware CAPTURE.

Figure D.1
The CAPTURE Program



Output from local parallel ports LPT1, LPT2 and LPT3 can be assigned to the network ports NETLPT1, NETLPT2 and NETLPT3 in the Device Configuration window. Reassigning the output from LPT1 and LPT2 to network printers, as in Figure D.1, does not disable the actual LPT1 and LPT2 ports on the computer. ControlView can still use them to print on a local printer.

Configuring a Novell Network Printer

To define Novell network printers:

1. Define the printer type and spool size of each printer on the Printer Configuration Editor window in the Setup menu.
2. Define each printer as NETLPT1 through NETLPT3 (three network printers are allowed) in the Device Configuration window.
3. Quit to DOS and re-start ControlView to put the new configuration into effect.

See Chapter 2, *The Setup Menu*, for information on setting up network printers in the Device Configuration window.

To configure Novell network printers, once they are defined:

1. Choose *Configure Novell Printers* under Configure in the Setup menu (or type the command NOVELL in the command line).

Figure D.2
Novell Printer Configuration Window

Novell Printer Configuration				
Capture	Banner Name	Status		
Local Printer	Server Name	Server Printer	Banner Text	Banner Name
NetLPT1: *	CSV_2	1	ControlView1	SUPERVISOR
NetLPT2:	CSV_2	2	ControlView2	SUPERVISOR
NetLPT3:	CSV_3	1	ControlView3	SUPERVISOR

* = Printer captured

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2. Choose *Capture* from the options at the top of the window. If your network drivers are not loaded, a message will notify you before you can edit the network printer configuration.

Figure D.3
Novell Printer Capture Data Window

Novell Printer Capture Data

Server Name: []

Server Printer: [0]

Print Banner: [Yes] Banner Text: [ControlView2]

Interpret Printer Control Characters: [Yes] Tab Size: [4]

Form Name: []

Enable Timeout: [Yes] Timeout Count: [10]

Number of Copies: [1]

Page Width: [132] Page Length: [66]

Suppress Form Feed: [No]

Accept <+> Cancel <Esc>

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3. The Novell Printer Capture Data window has the following fields—some containing default entries. Refer to your Novell documentation, *Command Line Utilities*, for more detailed information on this program and its parameters.

- Server Name

Enter the name of the file server that the network printer is attached to. This is the “node name” of the server being accessed.

- Server Printer

Enter the number of the printer you wish to capture. There can be up to five printers on each server.

Important: On file servers running Novell 2.2 or 3.11, the SPOOL command must be issued at the file server console, to connect the printer number with a named printer queue.

- Print Banner

Choose *Yes* or *No* to define whether or not you want a banner message on the page before the print job. The banners outline which station initiated the printing (the LAN user name), the time and date of printing and the banner string. Banners are useful for determining the source of printed data when several stations send to the same printer

Important: Don't print a banner if you are logging alarms or activity to the printer.

- Banner Text

This is the title displayed in large letters on the banner page. The banner name can be up to 12 characters long.

- Interpret Printer Control Characters

Choose *Yes* or *No* to tell the network if it should allow extended ASCII characters to be passed through to the printer. If *Yes*, the printer will interpret them as printer control characters (sometimes referred to as graphic or control characters). If *No*, the network intercepts control characters. In most cases this field should be set to *No*.

Important: Choose *No* if you will be sending screen prints to the printer.

- Tab Size

Enter a number for the number of spaces that will be sent to the printer when a tab character is found. From 1 to 18 spaces can be specified.

- Form Name

This can be a name or number that identifies a form to be used when printing files in a specific format.

- Enable Timeout

Choose *Yes* or *No* to determine whether to cancel the print operation if the printer does not respond. If timeout is not enabled, the system will continue trying to perform the print operation indefinitely. If timeout is enabled, the system will wait only as long as specified in the next field (Timeout Count) before terminating the print job.

- Timeout Count

Enter a number for the length of the timeout in seconds.

- Number of Copies

Specify how many printed copies you would like.

- Page Width

Enter a number for the maximum number of characters to be printed on one line:

80 = standard size

132= compressed mode

- Page Length

Set the maximum number of lines per page—usually 66.

- Suppress Form Feed

Choose *Yes* or *No* to determine whether the network will send a form feed at the end of the print job.

Important: Choose *Yes* if you will be sending log messages, such as alarm logs to the printer.

4. Once the capture fields have been configured, choose *Accept* to save your changes. A separate Capture configuration can be defined for each network printer port. (NETLPT1 to NETLPT3.)
5. Select *Banner Name* from the top of the Novell Printer Configuration window if you want to define the banner name as something other than the default LAN user name.

Capturing Novell Printers in ControlView

You can capture any network printer that has been defined in the Device Configuration window and configured in the Novell Printer Configuration window.

1. Choose *Capture Novell Printers* under *Tools* in the Actions menu. The Novell Printer Management window is displayed.

Figure D.4
Novell Printer Management Window

Novell Printer Management				
<input type="checkbox"/> Start Flush Cancel EndCap Status				
Local Printer	Server Name	Server Printer	Banner Text	Banner Name
NetLPT1: *	CSV_2	1	ControlView1	SUPERVISOR
NetLPT2:	CSV_2	2	ControlView2	SUPERVISOR
NetLPT3:	CSV_3	1	ControlView3	SUPERVISOR

* = Printer captured

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2. Highlight a printer, then choose *Start*. Repeat for each printer you want to capture. If the capture is successful, an asterisk (*) will appear beside the printer name.

If your network printers have been defined, you can capture printers from the command line by typing the command:

Capture /n

where *n* represents the printer number you would like to capture. To capture all the defined printers, type:

Capture /a

If you would like your printers to be captured each time you boot ControlView, include the `CAPTURE /n` (or `/a`) command in your Startup macro.

Releasing Novell Printers in ControlView

1. Choose *Capture Novell Printer* under *Tools* in the Actions menu. The Novell Printer Management window is displayed.
2. Do one of the following:
 - Highlight the printer, then choose *EndCap*. The printer is released after sending any spooled data to the printer.
 - Highlight the printer, then choose *Cancel*. The printer is released immediately. Any spooled data is discarded.
 - Highlight the printer, then choose *Flush*. Any spooled data is sent to the printer. The printer is *not* released.

Capturing Novell Printers in DOS

As an alternative to capturing printers in ControlView, the capture process can be done in DOS with the Novell `CAPTURE` command. Any printers that have been captured in DOS will have their capture parameters passed through to ControlView and will be fully operational, provided the printers have been defined in the Device Configuration window.

The following parameters are recommended for use with the `CAPTURE` command:

- | | |
|-----|--|
| nff | No Form Feed - disables automatic insertion of form feeds after every print job. If you are logging alarms to the printer, the time between alarms may be great enough to convince the network printer services that each alarm is a separate print job. If automatic form feeds were allowed, each alarm would be printed on a separate page. |
| nb | No Banner - disables placing a banner at the beginning of each print job. If the printer assumes each alarm to be a separate job, as suggested above, placing a banner before each job will have the same effect as a form feed, that is, one alarm per page. |

ti=10

Time=10 - tells the network printer software to wait ten seconds for more print characters before queuing the print job. Since the ControlView is a multitasking system, there could be delays between the sending of characters. If this timeout is set too short, the printer software may break a print job with a brief delay into a number of small jobs, or might even print a job from another ControlView task in the middle of the first job.

If you have a network printer captured in DOS, you can change the parameters of the capture. Choose *Capture Novell Printer* under Tools in the Actions menu (or type the command CAPTURE in the command line). Choose *EndCap* to stop the current capture. Then return to the Novell Printer Configuration window under Configure in the Setup menu and choose *Capture*.

For more information on the Novell CAPTURE command and its parameters, see your Novell documentation.

Important: Before capturing a printer within ControlView, run the SPOOL command at the file server console to associate a printer number with a print queue name. On the *file server* console keyboard type:

```
SPOOL <printer-number> TO <queue-name>
```

Example: Using the SPOOL Command

To associate PRINTER1 to the print queue named FINANCE, type this command on the file server console keyboard:

```
SPOOL 1 TO FINANCE      press Enter
```

Configuring a TCP/IP Printer

The TCP/IP printer support allows ControlView applications to print on Unix hosts which support the "line printer daemon", lpd, on TCP/IP networks.

To define TCP/IP network printers:

1. Define the printer type and spool size on the Printer Configuration window in the Setup menu.

Important: The spool size must accommodate the largest possible file that may be printed. For example, if you print an entire activity log with a 4 file log set of 500 line per file, and 80 characters per line, then the spool size should be $4 \times 500 \times 80 = 160,000$ bytes.

2. Quit to DOS and re-start ControlView to put the new configuration into effect. (Do *not* define the printers in the Device Configuration window.)

See Chapter 2, *The Setup Menu*, for information on setting up network printers in the Printer Configuration window.

To configure TCP/IP network printers, once they are defined:

1. Choose *Configure TCP/IP Printer* under Configure in the Setup menu (or type the command LPRCONFIG in the command line). The TCP/IP Printer Configuration window opens.

Figure D.5
TCP/IP Printer Configuration Window

Name	Printer	Description	Host	Queue
------	---------	-------------	------	-------

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2. Choose *Add*.

3. Fill in the fields on the screen:

▪ Name

Enter the name to identify this printer configuration.

▪ Description

Type a brief description of the printer configuration.

▪ Printer

Choose one of PRINTER1 through PRINTER4 as the default printer to use with this configuration.

Important: This selection must be a printer that was *not* already configured, in the Device Configuration window, as a serial, parallel or Novell printer.



ATTENTION: Each printer (Printer1, Printer2...) must use their own unique combination of values for the three fields Host, Queue and Login ID), otherwise print jobs may be lost.

Figure D.6
TCP/IP Add Printer Configuration Window

Add Printer Configuration

Name: Description:

Printer: Host:

Formatting: Queue:

Timeout: Login ID:

Banner: Width: Indent:

Title:

Banner Text:

Accept <+> Cancel <Esc>

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- Host

The name of the host providing the print services. The name must either be an Internet address, configured in the HOSTS file, or configured in a TCP/IP domain name server.

- Formatting

Specifies how the data is to be printed. Choose from:

- none No formatting.
- pr Perform pr style formatting.
- ASCII Treat the data as plain text, providing page breaks as necessary. All (non printable) control characters except for HT, CR, LF and FF are discarded.

Important: Choose *none* if you will be sending screen prints to the printer.

- Queue

The name of the configured printer on the host.

- Timeout

The number of seconds of inactivity allowed before a job is considered complete. This value must be greater than zero.

- Login ID

The login name on the host, to be printed on the banner page. The default is the ControlView login name.

- Banner

Enter *Yes* to print a banner page, otherwise enter *No*.

Important: Do not print a banner page if you are logging alarms or activity to the printer.

- Width

The number of columns for the printing option.

- Indent

The number of columns to indent.

- Title

If you chose **pr** in Formatting, this is the page title.

- Banner Text

If you entered *Yes* to Banner, this is the text on the banner page.
The job name and class are also printed.

4. Once the capture fields have been configured, choose *Accept* to save your changes. Several Capture configurations can be defined.

You may also use the LPRCONFIG command to display the TCP/IP Printer Configuration window.

Capturing TCP/IP Printers in ControlView

You can capture any network printer configured in the TCP/IP Printer Configuration window with any configuration that has been defined in the TCP/IP Printer Configuration window.

1. Choose *Capture TCP/IP Printers* under *Tools* in the Actions menu.

Figure D.7
TCP/IP Printer Capture Window

Name	Printer	Description	Host	Queue
Number 1	1	Configuration 1	Admin	Finance

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2. Highlight a configuration, then choose *Capture*. You may also select a different printer than the default, from the popup display.

If the capture is successful, the highlighted configuration will change color.

If your network printers have been defined, you can also capture TCP/IP printers from the command line by typing the command:

lprcapture [*configuration name*] [/*n*]

where *n* represents the printer number you would like to capture (otherwise the default printer defined in the configuration is captured).

If you would like your printers to be captured each time you boot ControlView, include the LPRCAPTURE command in your Startup macro.

Releasing TCP/IP Printers in ControlView

1. Choose *Capture TCP/IP Printer* under Tools in the Actions menu to display the TCP/IP Printer Capture window.
2. Highlight the required configuration, then choose *Cancel* from the options at the top of the window. The printer is released and any spooled data is discarded.

You can also use the LPRCANCEL command to release a TCP/IP printer.

Printing Files

Once your network printers are set up properly, you can print files in any of three ways:

- select *Print File* under Tools in either the Setup or Action Menu
- select *List File* under Tools in either the Setup or Action Menu
- type the PRINT command in the command line

Choose *Set Up List Print* under Tools in the Setup Menu to specify the file's print format and to choose a printer. See Chapter 2, *The Setup Menu*, for details.

Important: The PRINT command only sends line-feeds at the end of each line of text. It does not send carriage returns. If you find each new line being printed directly below the end of the previous line, configure your printer to accept line-feeds only.

See Appendix A, *ControlView Commands*, for more information on the PRINT command.

Printing Screens (SCREENPRINT)

You can send bit-mapped screen prints of any image produced by the system to a network printer. For screen prints, you should boost the spool size to 250 kB. See Chapter 2 *The Setup Menu*, for information on how to define printers in the Device Configuration window and Printer Configuration window.

To produce a screen print, display the screen you would like to print; open the command line and type the command SCREENPRINT. This will take a “snapshot” of the current screen and send it to the printer. If you do not want the command line to show up on your printed output, put the SCREENPRINT command in a key-definition and press the key instead of using the command.

Important: Screen prints always end with a form feed, so printing multiple screens will print one per page (assuming the first screen starts on a new page).

File Server Failure and Recovery

A ControlView station could become disconnected from the file server if:

- The server crashes or shuts down because of hardware or software failure
- The file server is shut down properly by the Network Manager
- The cable to the server is disconnected or damaged



ATTENTION: The system may not inform ControlView operators that the file server has gone down.

If an operator attempts to access a file from the server while the server is down, an error message will appear saying that the file was not found. If Data Logger, Alarming or activity logging to the server is being done at the time the server fails, logging will stop, and an error message will appear.

If the file server goes down for any reason, the ControlView workstations will be logged off the server automatically. When the file server is up and running again, the ControlView stations will have to quit ControlView and log on again with the usual logon procedure.

If the problem occurs because of a break in the physical connection between the file server and the workstation—inadvertent disconnection or damage to the cable, for instance—communications may be restored automatically if the break is momentary. File servers constantly monitor stations on the network, and will log them off if they are disconnected for too long. If this occurs, the operator will have to log on again in the usual way. The length of time a station can be disconnected without being logged off by the file server - from a few seconds to several minutes - depends on the type of network installed.

Important Points to Remember

Here are some things to be aware of when running ControlView on a network:

- While the remote ControlView stations do not require “SUPERVISOR” privileges, they do require all rights to any directory they access.
- A remote ControlView station will not be able to read a log file while the logging ControlView has it open. This means real time trending will *not* be possible on remote ControlView stations. The logging ControlView station will still be able to perform real time trending.
- Do not allow more than one ControlView to log alarms or activities to the same file set. Information could be lost or logged out of sequence.
- If communications between a ControlView station and the file server should fail for any reason, an **error message** may not be displayed by ControlView, and data may be lost. This may be critical if the Data Logger option is logging data to the file server at the time of failure.
- Run the Novell CASTOFF ALL command before starting ControlView to block all Broadcast messages.

Important: When using an NFS file system, do not create or edit databases on a network mounted drive.

ControlView Options and the LAN

Mouse GRAFIX

All Mouse GRAFIX files and libraries can be stored on the file server, ensuring a consistent source for all system screens and a universal set of Library files.

Data Logger

Logged data can be saved on the file server, and the binary files can be exported to other parts of the network for analysis by any network operator.



ATTENTION: If two or more ControlView stations are sharing the same Data Logger configuration, they must not store their configuration files in the same directory. Each must have a copy of the configuration in a separate directory. Otherwise ControlView may behave unpredictably.



ATTENTION: If two or more ControlView stations are logging data at the same time, they must log to different directories. If more than one ControlView station is allowed to log to the same directory at the same time, the data will be mixed and unusable.

Trending

Important: Due to network file sharing, a remote ControlView station can't read a log file while the logging ControlView station has it open. This means real time trending from a data log file is not possible on remote ControlView stations. The remote ControlView station can only access the historic data after:

1. The logging ControlView has closed the trend file; and
2. The remote ControlView has exited its current trend graph and re-entered Trending.

The logging ControlView station will still be able to perform real time trending.

To ensure that your remote ControlView stations can access recently logged data, either:

- Institute some arrangement by which the operator at the logging ControlView station is signalled to open a new logging file whenever it becomes necessary to access the recently logged data over the network. The remote ControlView stations can then access the logged file by entering the trend.

OR

- Set the Create Data Logger Model *Filesize in KBytes* field to a fairly low number. This will cause Data Logger to open a new file at frequent intervals and allow the remote ControlView stations access to reasonably up-to-date data.

If you opt for this solution, set the *Maximum Number of Files* field in your Create Data Logger Model window to a high number, so that a reasonable quantity of data can be collected before Data Logger begins to delete the oldest log files. The maximum is 200 files.

In either case, set the *Minimum free disk space* to well over 1000K. A file server should never come close to running out of disk space.

Alarming

Alarms can be logged to the file server. However, if more than one ControlView station is logging alarms, each one must log to a uniquely named file set.

Event Detector/Derived Tags

Event Detector and Derived Tags files can be stored on the file server. However, no more than one ControlView station can access any one file at the same time.

Reporting

Reporting output files can be stored on the file server.

Important: Do *not* store Reporting template files on a network mounted drive.

Setting Up Modems

Modem Support

ControlView modem support provides:

- support for leased line, radio and dial-up modems
- the ability to dial-out to a remote station
- the ability to respond to a remote station dial-in, with general purpose data transfer provided by a utility generated by C-Toolkit
- flexible hardware handshake configuration capable of supporting most vendor's modems
- Hayes™ compatibility, with built in features to handle modem specifics such as modem initialization
- capability for all existing ControlView serial device drivers to communicate using modems
- event scheduling based on success or failure of a dial-out, the termination of a connection (hangup), and the answer of a remote dial-in
- phone number database

Setting Up Modems

Follow these steps to set up modems:

1. Set up the hardware.

Information about cables, enabling signals and debugging is provided later in this appendix.

2. Configure the modem in the Modem Configuration window.

Choose *Configure Devices* under *Configure* in the Setup Menu, then select *Modem Configuration*. For details see Chapter 2, *The Setup Menu*.

The section *Modems and Highway Topology* later in this appendix, provides information you may require for this configuration.

3. Assign the modem to a data highway in the Device Configuration window.

Choose *Configure Devices* under Configure in the Setup Menu. For details see Chapter 2, *The Setup Menu*.

4. Set up each modem in the Modem Setup window.

To display the window, type in the MODEMSETUP command and select the modem from the popup list.

(There is no menu item to execute the MODEMSETUP command.)

Figure E.1
Modem Setup Window

Modem Setup

Modem Device: MODEM1

Modem Remote Dial-In Event Scheduler

Answer: _____

Hangup: _____

Modem Activity Timeout: seconds (0 = no timeout)

Dial Prefix:

Accept <+> Cancel <Esc>

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Enter the fields as follows:

- Answer

Type in a command or macro that will be executed when a remote call is answered.

- Hangup

Type in a command or macro that will be executed when a remotely established link is hung up or there is an activity timeout. It will not be executed when the hangup is local.

▪ Modem Activity Timeout

Specify the maximum number of seconds the modem will wait, after activity has finished, before hanging up. Valid values are between 1 and 6,000 seconds. If this field is set to zero, the modem link never times out. The default value is 30 seconds.

▪ Dial Prefix

Specify a string to be sent to the modem, to prefix any phone number used by the *Dial Modem* menu option or the DIAL command. Normally this will be **ATD** which tells the modem to dial.

5. Choose *Accept* to save the information.

6. Build a modem directory of telephone numbers.

Choose *Configure Phone List* under Configure in the Setup Menu. For details see Chapter 2, *The Setup Menu*. Alternatively use the MODEMDIRECTORY command.

7. Build a set of names for useful modem commands.

To display the window, type in the MODEMSTRING command. (There is no menu item to execute the MODEMSTRING command.) Then select *Add*.

Figure E.2
Modem Command Configuration Window

Modem Command Configuration	
Modify	Add Delete
Name	Modem Command String
AUTOANSWER DIAL INIT1 INIT2 LONGDIST NOANSWER	ATS0=1 ATL1 DP 9, ATZ ATZ &A3 &B1 X7 &S1 ATDT 9,,7654321,,55555,, ATS0=0

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Enter the fields as follows:

- Name

Type a name that you have assigned to the command. The name must start with a letter and have no embedded spaces.

- Modem Command String

Type in the modem command.

Choose *Accept* to save the information.

Using a Modem

To use the modem to transmit, use these menu options:

- To establish a connection by telephone line, select *Dial Modem* under Tools in the Actions Menu. For details see Chapter 3, *The Actions Menu*. Alternatively use the DIAL command.

The telephone number must be already set up in the Directory Configuration window.

- To terminate a telephone connection, select *Hangup Modem* under Tools in the Actions Menu. For details see Chapter 3, *The Actions Menu*. Alternatively use the HANGUP command.
- To monitor the status of the modem connections, select *Modem Status* under Tools in the Actions Menu. For details see Chapter 3, *The Actions Menu*. Alternatively use the MODEMSTATUS command.
- To execute a command with a modem, use the MODEMCOMMAND command.

The command must be already set up in the Modem Command Configuration window.

Scanning PLCs in a Remote Highway

To scan PLCs in a remote highway:

1. Define the modem in the Modem Configuration window.
2. Assign the modem to the highway in the Device Configuration window.
3. Ensure that the modem is properly attached to the specified port on your computer.

4. At the remote end, ensure that a properly configured modem is attached to the data highway communication interface (KF2 or KF3, for example) and that the baud rates are compatible.
5. Dial up the modem using either *Dial Modem* under Tools in the Actions Menu or the DIAL command. Run highway diagnostics to ensure that proper communication has been established.
6. Once proper communication has been established, run the application.

You can automate the entire sequence by:

1. Configuring the phone number with a success macro that starts the application and a fail macro that displays an information message if the DIAL fails (because the phone is busy).
2. Using the DIALUP command with the configured phone number.

Cables for Modems

All ControlView modems use the hardware handshake lines. The following table can be used to construct the required cables:

Table E.A
Pin Out Configuration for the DB-25 and DB-9

Signal	DB-25 Pin#	DB-9 Pin#
Transmitted Data (TX)	2	3
Received Data (RX)	3	2
Request to Send (RTS)	4	7
Clear to Send (CTS)	5	8
Data Set Ready (DSR)	6	6
Signal Ground	7	5
Carrier Detect (DCD)	8	1
Data Terminal Ready (DTR)	20	4

If a flip cable or null-modem is required, the following flipping should work, depending on the setup:

- TX with RX
- RTS with CTS
- DSR with DTR

Enabling the Signals

For a standard Hayes compatible dial-up modem

1. Enable the DTR signal by doing one of the following:

- setting a DIP switch on the modem
- sending an AT modem command, such as "AT&D2"

ControlView cannot hang up the modem unless the DTR signal is enabled.

2. Enable a DCD signal by doing one of the following:

- setting a DIP switch on the modem
- sending an AT modem command, such as "AT&C1"

ControlView cannot determine when a connection is established unless the DCD signal is enabled.

3. If modem commands have been used in steps 1 and 2, save the commands to the modem's non-volatile RAM (typically using AT&W).

Debugging Commands

The following commands are helpful when debugging a system:

Table E.B
Debugging Commands

Command	Description
ATM0	modem speaker is off
ATM1	speaker is ON until carrier is established
ATE0	local echo OFF
ATE1	local echo ON
ATQ0	result codes displayed
ATS0=0	auto answer off
ATS0=1	answer phone after one ring
ATV0	numeric result code
ATV1	verbal result code

Important: ControlView ignores result codes.

Important: Familiarize yourself with your modem first, before using it with ControlView. Note that each type of modem has its own command set.

Modems and Highway Topologies

This section provides information you may require to configure a modem in the Modem Configuration window.

In this appendix, highway topology refers to the layout of the communication highways and the physical arrangement of the devices in the highway, with respect to each other.

There are two main types of highway topology when using modems:

- point-to-point
- point-to-multipoint

The figures below illustrate them. In the point-to-multipoint illustration, ControlView is the master and the other devices are slaves.

Figure E.3
Point-to-point Topology

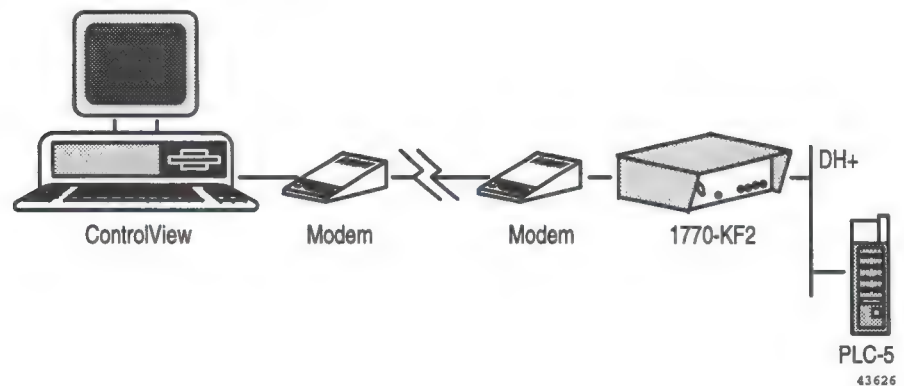
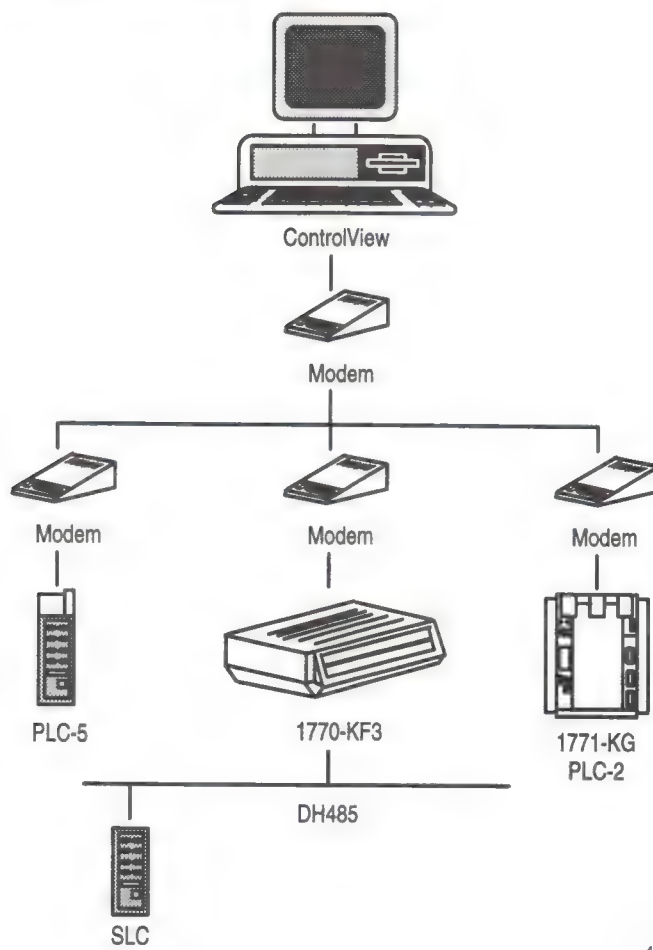


Figure E.4
Point-to-multipoint Topology



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Modem Type Field Settings

Refer to the table below to determine the *Modem Type* setting you should use in Modem Configuration window.

Table E.C
Modem Type Field Settings

To Use this Modem:		With this Topology:	Set the Modem Type Field to:
Dial-up		Point-to-point	DIAL-UP
Half Duplex	Leased-line or Dedicated-line or Radio	Point-to-point or Point-to-multipoint	RTS-TOGGLE
Full Duplex	Leased-line or Dedicated-line or Radio	Point-to-point	RTS-CONSTANT
		Point-to-multipoint	Master: RTS-CONSTANT Slave(s): RTS-TOGGLE

Using Dial-up Modems

Dial-up modems are for point-to-point communication. When using dial-up modems, use the modem type DIAL-UP. This is a typical setting for using the DF1 full-duplex protocol (that is, the data channel configuration DH/DH+, using a serial channel), although other protocols could be used as well.

Using Leased-line or Dedicated-line Modems

These types of modems can be used in point-to-point topology or point-to-multipoint topology. The modem type you select depends upon the topology.

For point-to-point applications, as long as the leased line modems are full-duplex (they allow bidirectional, simultaneous communications), it is best to use RTS-CONSTANT as the modem type. This will cause ControlView to assert RTS (Request To Send) at powerup and leave it set continuously, causing the modem to establish a continuous carrier. This is the recommended approach for point-to-point applications, because having a constant carrier increases the throughput by decreasing any delays associated with establishing a carrier.

For point-to-multipoint applications, set the slave devices to RTS-TOGGLE (or half-duplex) operation. Since they all share the same transmit line to the master, only one slave can transmit at a time and it is required that no two slave devices attempt to transmit at the same time. This multiplexing is usually handled by the link-layer protocol (for example, DF1 half-duplex or Modbus).

The master can be configured for either RTS-TOGGLE or RTS-CONSTANT. If you are using a 4-wire media (that is communications in one direction are on a separate physical wire, or a different frequency, than communications in the other direction), then the master station could be configured for RTS-CONSTANT causing the master's modem to establish a continuous carrier. This is the recommended approach, because having a constant carrier increases throughput by decreasing delays associated with establishing a carrier.

The point-to-point topology is the typical setup for using the DF1 half-duplex or Modbus protocols.

Using Radio Modems

These types of modems can be used in point-to-point topology or point-to-multipoint topology. The modem type you select depends upon the topology.

For point-to-point applications, as long as the radio modems are full-duplex (they allow bidirectional, simultaneous communications), it is best to use RTS-CONSTANT as the modem type. This will cause ControlView to assert RTS (Request To Send) at powerup and leave it set continuously, causing the modem to establish a continuous carrier. This is the recommended approach for point-to-point applications, because having a constant carrier increases the throughput by decreasing any delays associated with establishing a carrier.

For point-to-multipoint applications, set the slave devices to RTS-TOGGLE (or half-duplex) operation. Since they all share the same transmit line to the master, only one slave can transmit at a time and it is required that no two slave devices attempt to transmit at the same time. This multiplexing is usually handled by the link-layer protocol (for example, DF1 half-duplex or Modbus), although sometimes the radio modem itself will handle collisions.

The master can be configured for either RTS-TOGGLE or RTS-CONSTANT. If your radio modems support bidirectional, simultaneous communications, then the master station could be configured for RTS-CONSTANT causing the master's modem to establish a continuous carrier. This is the recommended approach, because having a constant carrier increases throughput by decreasing delays associated with establishing a carrier. However, due to the nature of radio frequency transmissions, this may not be possible or desirable.

Another consideration for radio modems is the time it takes for them to establish a carrier once they receive the RTS control signal. When a device, such as ControlView, wants to transmit a message, it asserts the RTS signal, waits for the CTS (Clear To Send) signal from the modem, and then transmits the message. Some radio modems, however, assert CTS even though they do not have a carrier established. If ControlView attempts to send a message with no carrier established, the first couple of bytes may not be sent by the modem and this would result in retries. When working with this type of modem, you may need to configure a software delay between the time the RTS is asserted by ControlView and when it actually sends the message. This can be done by configuring an RTS start delay on the Modem Configuration window.

Additionally, some radio modems drop their carrier as soon the RTS signal is stopped. This can sometimes cause the last few bytes not to be sent, and again results in retries. To work around this situation, configure an RTS stop delay, which is the time ControlView will leave RTS asserted after it completes sending the message. Configure the RTS stop delay on the Modem Configuration window.

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